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RATIONALISATION AND TECHNOLOGICAL UNEMPLOYMENT[1]

S. 1. In recent years British economic science has been enriched by the incorporation into its phraseology of two new terms of art: an incorporation which is significant on more than one ground. One German, the other American in origin, their adoption points to the international character of the social and economic problems of the age and to the directions whence we are accustoming ourselves to find inspiration; vague and uncertain as their content is, their use indicates a shift in the centre of gravity of economic discussion, for they relate to problems of production, and their use is thus a sign that that preoccupation with distributional problems, beginning with Ricardo, but especially characteristic of the last quarter century of British economic thought, has taken a new turn. Lastly, the circumstance that widespread currency has been given to those new and alien terms in connection with the public discussion of the questions to which they relate has created an unfortunate impression that the economic life of the world is being confronted by novel, vast and mysterious problems, of a kind hitherto unknown. The problems involved are indeed of the utmost importance, but when their character is analysed, it will be found that they derive their importance more from a change of scale than from the novelty of their nature.

S. 2. The phenomena to be discussed are capable, if not of exact, at least of fairly definite statement. Throughout the world a conscious process of reorganisation is taking place, involving both the structure of industry and the methods of production. To this process the name of rationalisation has been given. It is many-sided, but among the characteristic results of the rationalisation process are: a growing control over the market, a growing standardisation of process and output, and an

[1] Presidential Address before Section F of the British Association, 1930.

increasing—in some cases, a very largely increasing—output per worker. These associated organisational and mechanical changes have, therefore, the result of economising the amount of labour *directly* required per unit of output, and—in so far as the distribution of goods over space and time is itself rationalised—of involving also a net reduction in the amount of labour required to place a unit of output *in the hands of the final consumer*. Given this trend the question arises: Will not the opportunity for finding employment in industries subject to these processes of change also undergo a change? In other words, does rationalisation inevitably bring with it unemployment due to the technological alterations involved? If an affirmative answer is given, then *part* of the existing volume of unemployment in Germany, the United States and Great Britain is not due to causes *local* to the area concerned, such as the popular explanations that unemployment is due respectively to the Gold Standard or the pressure of Reparations or the Wall Street slump, nor even to such *general* factors as the present fall in world prices, but must be directly ascribed to the technological or structural alterations which are taking place. Undoubtedly, if unemployment is resulting from technological changes, the social problem of dealing with it is greatly aggravated by the existence of other local and general causes of unemployment. But we are not entitled to assume that when the *local* causes making for unemployment have disappeared we shall then find ourselves with unemployment reduced to some pre-war "normal," for there is no reason to suppose that in the immediate future the rationalisation process will come to an end. *If* rationalisation does cause unemployment, the post-war "normal" may be higher, perhaps considerably higher, than the pre-war one. Thus, in the final analysis, we are face to face with the curious result that one of the most popular of all remedies for unemployment may in itself be one of the causes producing the evil for which a remedy is to be found.

S. 3. The first requisite in attempting to analyse the relationships between technical improvements and the volume of unemployment is an historical standpoint. The resistance to change is a permanent element in human society: no alteration in the structure of society or in its detailed economic arrangements can be made without some interference with vested interests. All abstract reason may teach that without mechanical invention and discovery, and without improved organisation, the greater part of the world's present population would never have been born: all experience may prove that without economy of effort no increase

in the standard of life is possible—nevertheless change and improvement may be resisted, and upon grounds which deserve serious consideration. The problem, from this point of view, is one of the distribution of the gains and the sacrifices. No one will expect the farmer to rejoice at so bountiful a crop that it does not pay to cart it to market: to appreciate the significance of the law of diminishing returns is as important as to understand that the practice all round of the principle of restriction of output means lessened material welfare. Neither Robinson Crusoe nor a purely Communistic State would be distressed by the problem which we have to discuss here. Under Crusoe economics, mechanical invention and improved organisation would allow of increased consumption or increased leisure, or both, to the sole person interested; under a purely communistic régime improved organisation and technical progress (assuming them to be possible) would increase the national dividend or diminish the national expenditure of energy, or both, without necessarily making things worse for anyone concerned, for, *ex hypothesi*, goods would be still shared in common. In the Communistic State rationalisation might result in unemployment, but it would not mean, what it may mean under a régime of private property, a *very* unequal distribution of the gains and losses from the changes taking place —though even in a Communistic State some difference would in practice have to be made between the employed and the unemployed in order to diminish the attractiveness of leisure to the unemployed.

S. 4. The progress of technique has been the characteristic feature of the Western World since the eighteenth century, but it was in the early years of the Machine Age that the problems arising out of the contemporary developments were most fully discussed by economists. For this reason the discussion of the problem of Rationalisation by the Classical Economists has a direct significance for the present age: the problem of the "Influence of Machinery upon the Condition of the Labouring Classes" which was debated by Ricardo and McCulloch, Chalmers and Babbage and Senior is in all essential respects the problem which vexes us to-day. Whatever may have been the attitude of the popularisers of economic thought, the original thinkers of the time were by no means so intoxicated with the progress of technique that they failed to see that it had its drawbacks. Ricardo, in his celebrated recantation in the chapter on Machinery in the third edition of the *Principles*, finally arrived at the conclusion that the "substitution of machinery for human labour

is often very injurious to the interests of the class of labourers . . . the same cause which may increase the net revenue of the country may at the same time render the population redundant, and deteriorate the condition of the labourer,"[1] and, in summing up his thought, argued roundly that " the opinion entertained by the labouring class, that the employment of machinery is frequently detrimental to their interests, is not founded on prejudice and error, but is conformable to the correct principles of political economy."[2] But this view, though it can be defended on adequate grounds, was based by Ricardo on reasoning which must be regarded as untenable. Charles Babbage, the most fervent contemporary apostle of the application of scientific method to economic life, discusses the whole issue very admirably in his work *On the Economy of Manufactures*. Whilst reduced prices, consequential upon the use of machinery, have a tendency to reabsorb the labour inevitably displaced, yet in order to prove " that the total quantity of labour is not diminished by the introduction of machines, we must have recourse to some other principle of our nature."[3] This principle turns out to be the influence of the increased *power* to enjoy upon the *desire* to enjoy : " He who has habitually worked ten hours a day will employ the half-hour saved by the new machine in gratifying some other want; and as each new machine adds to these gratifications, new luxuries will open to his view, which continued enjoyment will as surely render necessary to his happiness." But this optimistic psychology of wants does not prevent Babbage from stressing, (*a*) the effects of new machinery in *redistributing* the demand for labour, so that " considerable suffering among the working classes " results, (*b*) the increased competition which rationalisation sometimes induces among the workers, for " even though the increased demand for the article, produced by its diminished price, should speedily give occupation to all who were before employed, yet the very diminution of the skill required would open a wider field of competition amongst the working classes themselves," (*c*) the

[1] *Principles*. McCulloch's edn., p. 236.

[2] *Op. cit.*, p. 239, cf. this with the utterances of a more modern pessimist: Capitalistic rationalisation, in the absence of constantly expanding foreign markets is " driven back upon the home market: and there it defeats itself and creates around it a desolation of unemployment and human decay." Labour " deprived of its independent source of income (cf. Ricardo's 'Gross Revenue') ceases to be effective in the market as a buyer, and thus defeats the aim of the reduction in costs which has been achieved." G. D. H. Cole. *The Next Ten Years*, p. 109.

[3] This and the following citations, are taken from the fourth edition of the *Economy of Manufactures*, 1835, paras. 404–407.

difficulty in deciding whether, when improvements were made, the process of displacement should be gradual or immediate: "the suffering which arises from a quick transition is undoubtedly more intense; but it is also much less permanent than that which results from the slower process; and if the competition is perceived to be perfectly hopeless, the workman will at once set himself to learn a new department of his art." In the end Babbage was driven to adopt a very doubting tone: "That machines do not, even at their first introduction, *invariably* throw human labour out of employment, must be admitted; and it has been maintained, by persons very competent to form an opinion on the subject, that they never produce that effect. The solution of this question depends on facts, which unfortunately have not yet been collected," and he makes a powerful plea for further statistical information, which after the lapse of a century one is still forced to echo.

Neither Chalmers, who believed in the doctrine of the Wage Fund, nor Senior, who did not, denied that the effect of machinery might be to increase unemployment. "It is not the true vindication," argues the former, "that the making of the machines opens so great a source of employment, that the making and working of them together take up as many hands as did the making of the commodities without the machines; for, in this case, there would be no abridgment of labour, and no advantage to master-manufacturers in setting up the machinery. And it is not a sufficient vindication, that, when an article is cheapened by machinery, the demand for it is so much enlarged, as still, in spite of the abridgment in labour, to require as many, if not more, labourers for its preparation as before: for this, though true of many, perhaps most trades, is not true of all."[1] The true defence is that "the fund, out of which wages come, is left unimpaired." Senior's general position cannot be shortly described, but he does at least admit that when the demand is inelastic, employment declines, though this is to him the exception. Citing the case of a screw which "in the manufacture of corkscrews, performed the work of fifty-nine men," he argued that this example "is as unfavourable to the effects of machinery as can be proposed; for the use of the commodity is supposed to be unable to keep up with the increased price of production, and the whole number of labourers employed on it is, consequently, diminished. This, however, is a very rare occurrence. The usual effect of an increase in the facility of providing a commodity is so to increase

[1] *Pol. Economy, Appendix Note B on Machinery*, p. 56.

its consumption as to occasion the employment of more, not less, labour than before." [1]

The classical school had thus, by the middle of the last century, resolved the problem into its constituent parts. Under what conditions will rationalisation involve unemployment in (*a*) a single industry (*b*) in all industries taken together? Or, is there some inherent " principle of human nature " upon which reliance can be placed to solve the problem, after transitional effects have been overcome? Those were, and remain, the fundamental issues which have to be faced.

S. 5. Available figures do reveal impressive improvements in production in recent years, and gain added significance when placed in juxtaposition with figures relating to employment. An increase in *per capita* and aggregate output in a single industry accompanied by a decline in the number of workers engaged does not, of course, necessarily imply the existence of any unemployment at all, since an industry normally loses a certain percentage of its workers every year, and if the rate at which new entries take place is adjusted to the new technical conditions, the consequences of technical improvements can only be judged of indirectly. An increase of aggregate and *per capita* production over industry generally accompanied by growing or stable unemployment does, however, suggest that the rate of improvement is for the time being so great that over the range of industry covered the chances of employment are diminishing; though unless the unemployment returns cover the whole, or a very significant part of the employable population, it may still be the case that, *indirectly*, the effects of rationalisation are being offset, in whole or in part, by an increase in the volume of employment in the occupations not recorded in the returns. And since production figures are biased by the choice of base years, the incidence of the trade cycle, changes in the demand for particular commodities and the like factors, even the co-existence of increasing aggregate and *per capita* output with increasing or stable unemployment, is not by any means a completely valid test of the relationship between the elements in the problem.

The best-advertised figures are undoubtedly those relating to the United States.[2] Put into their simplest form, the Census of Production figures show that between 1919 and 1927 (the last a year of comparative depression of trade), the number of workers

[1] *Pol. Economy in Ency. Metropolitana*, 1850, p. 166.

[2] Some of the material cited below has already been made use of by me in an article : " Is America Prosperous? " *Economica*, No. 28, pp. 7–8.

in the four main divisions of American industry: viz., agriculture, mining, transport and manufacturing, declined by 7 per cent., quantitative output increased by 20 per cent., and output per worker by 30 per cent. approximately. The figures adduced by Mr. Woodlief Thomas carry the same implications with them: they relate to a comparison of the years 1918–20 as base with 1924–6.[1]

Index at beginning of period = 100.

	Workers.	Output.	Output per Worker.
Agriculture, 1924–6 . . .	95	112½	118
Mining ,, . . .	100	127	127
Manufactures ,, . . .	91½	128½	140½
Railways ,, . . .	91½	100	109
Average ,, . . .	93	120	129

Accurate unemployment figures for the U.S.A. do not exist: estimates exist for 1928 which vary from 1·9 millions to 2·6 millions: one estimate for 1927 was 4 millions, whilst another authority gives an estimate which varies from 4¼ millions in 1921 to a minimum of 2 millions in 1927.[2]

A census of production does not exist in Germany. The revised index of production recently published by the Institut für Konjunkturforschung (Base 1928 = 100; comprising 31 weighted industrial groups) shows that production rose from a figure of 69·5 for 1924 to 101 in 1929. In the year of rationalisation, 1925, the index rose to 83·3, fell in the slump of 1926 to 79 and reached 100 in 1927. Whilst the maximum number of applications per 100 places available reached a peak at the beginning of 1926 (in the period 1924–9), and the employment situation is marked by great seasonal variations, nevertheless a competent German authority points out that in 1929 " the rise in unemployment, as compared with the previous year, practically corresponded to the increase in the number of available workers caused by the age distribution of the population. In 1929 it was thus no longer possible for industry to absorb this increment." [3] Some interesting figures are cited by the same authority, illustrative of the growth of efficiency in particular industries. In the Ruhr Coal

[1] Woodlief Thomas—" The Economic Significance of the Increased Efficiency of American Industry " in *American Economic Review, Supplement*, 1928.

[2] *Recent Economic Changes in the U.S.*, 2 vols., 1929, *v.* Vol. II, pp. 469–78.

[3] *Germany's Economic Development during the Second Half of the Year* 1929, published by the *Reichs-Kredit-Gesellschaft*, 1930.

industry, for instance, the total number of employees declined by 10 per cent. between 1913 and 1928, whilst the output per employee rose by 26 per cent. In 1929, production per employee rose another 9 per cent. up to June, whilst employment fell another 2 per cent., though the monthly figures are clearly affected by seasonal changes. In another industry directly competitive with British industry the facts are even more striking: "The index of labour efficiency in the German machine industry, using the first quarter of 1925 as a basis, averaged 142 per cent. for 1929, as compared with 133 per cent. for 1928, 142 per cent. for 1927 and 126 per cent. for 1926." [1]

Even in the case of Great Britain, which is generally regarded as having lagged somewhat behind in the Rationalisation movement, more than one piece of evidence is available which suggests an increasing productivity as one of the immediate causes of unemployment. Quite apart from the recent speeches of industrial leaders at Company meetings representing such diverse products as cement, transport and rubber tyres, the production index of the London and Cambridge Economic Service when placed in juxtaposition with the employment figures reveals a far more rapid growth in the former than in the latter. Thus between 1924 and 1929 the Combined Index of Production rose from 100 to 116·2: the employed population over the same period increased from some 9,500,000 to 10,020,000 persons, or some 7 per cent., whilst unemployment was greater by nearly 4 per cent. No doubt the position in Great Britain is extraordinarily difficult to weigh, since world factors of any sort unfavourable to trade and industry are likely to affect this country to a greater degree than more sheltered areas. Nevertheless, the figures do suggest a growing divergence between the movement of production and the movement of employment.

S. 6. Whilst the foregoing analysis may be sufficient to establish a presumption that in recent years the process of rationalisation has been responsible for the creation of part of the existing volume of unemployment, in the end one is forced back upon general economic reasoning. Three general sets of circumstances have to be examined: the motive of rationalisation, the circumstances under which rationalisation takes place, and the methods of rationalisation actually adopted.

(1) The first point is simple. The motive of rationalisation is in all cases to reduce costs from the standpoint of the capitalistic producer: it is not the reduction of "real" cost or "social"

[1] *Germany's Economic Development*, etc., p. 14.

cost. It may very well be the case that a process which reduces pecuniary costs from the capitalistic point of view also reduces "real" cost: a new technique may involve less actual psychic strain to the worker employed. On the other hand, standardisation may involve elements of social loss: a lowering of the standard of skill or reduction of the creative and æsthetic element in work. It follows from this that whenever wage costs per unit of output form a substantial element in the price of the product per unit before rationalisation, it will pay the producer to reduce that cost, if necessary, by the displacement of labour by mechanical instruments. It does *not* follow that unemployment *must* ensue, since we have still to take account of demand for the product, and of the indirect effects of the economies introduced. But unemployment *may* follow. And from this point of view it is important not to overlook the circumstance that the attractiveness of reducing wage costs per unit of output is not an absolute magnitude: it is a function of the wage cost itself and of the economies to be realised by alternative processes. Now it is at least significant that at the present time the rigidity of wage rates is a striking element of the economic situation in this country: all other prices are falling, but the price of labour is not. The same is true of Germany—at least as regards unskilled labour. In 1929 "weekly wages on standard time schedules" of unskilled labour were between 75 per cent. and 80 per cent. above 1913; the cost of living was only about 55 per cent. above the pre-war level. In the United States, the check to immigration has given labour something like a quasi-monopoly. Under these circumstances, to economise labour as much as possible represents merely ordinary business prudence.

(2) The effect of rationalisation upon the chances of employment obviously differs when the striving after economy is the result of a period of intense demand for goods and services of all kinds, or when the striving after economy represents an attempt to meet the exigencies of falling prices or an unfavourable economic situation generally. The war period represents the first alternative, the present moment the second. During the War, rationalisation was forced on because there was an insatiable demand for goods, at a time when a large proportion of the able-bodied workers of the country were absorbed by the Army. At the present moment, when industry is suffering from a contraction of the market and when, on other grounds, there is already a surplus of labour available, the position is obviously different. Again we are not entitled to assume that unemployment must

ensue, for we must again deal with the demand side before we arrive at a final conclusion, but in general it is at least clear that unemployment is *more likely* to ensue from rationalisation than was the case during the War.

(3) Lastly, as regards the *methods* of rationalisation. Here, of course, the task of analysis is complicated by the fact that a large variety of rationalisation methods can be distinguished, the effects of which on the employment situation (even without taking demand conditions into account) may be very different.

(*a*) So far as so-called "Financial Rationalisation" is concerned: that is, the writing down of book values and the consequential cleaning up of the balance-sheet position, there is obviously no direct connection with the problem of employment at all.

(*b*) But financial rationalisation when it means—as it increasingly does—a greater degree of integration of enterprises, does affect the employment situation directly.

When integration involves concentration of particular types of output at different works, then, in so far as different degrees and kinds of skill are involved, a problem of mobility at once arises, for grades and types of labour formerly required at more than one point are now required, perhaps, at only one point. The greater the difficulty of getting labour to move, the greater the chances that the further consequences of concentration—improved processes, eliminating the kind of labour which is difficult to obtain by substitution of another kind, or the replacement of labour by machinery—may throw a particular kind of labourer out of work altogether. At the very best one is then left with the problem of reabsorption in another direction.

(*c*) Standardisation of types, whether occurring as a result of concentration of output at certain points within an integrated group forming part of a wider industry, or whether occurring as a result of deliberate agreement by all the producers within an industry, has also a direct bearing on the labour situation, in so far as repetition work in and of itself encourages the further use of machinery and the substitution of skilled by unskilled labour.

(*d*) Lastly, we are left with certain rationalisation methods which have as their object not the direct cheapening of the product, but control over the market, through common sales-organisations of one kind or another. Their effect on the employment situation obviously turns on the price and sales policy adopted: and they thus involve the question of demand, to which we must now turn.

In considering the relations between rationalisation, the market and unemployment, there is one obvious point which tends to be lost sight of in popular discussion. The degree of rationalisation which " pays " is not an absolute magnitude, but depends on the " shape of the demand curve." Thus a complication is introduced through the circumstance that the point of optimum economy in production may involve a volume of output which, *if it is to be sold*, reduces the aggregate return below the maximum attainable if a smaller volume had been produced and marketed. In such a case—which cannot always be foreseen in advance—and given the absence of effective competition, the economies in labour cost may be eaten up by a rise in the overhead cost, and if there has been a reduction in the volume of labour directly employed, there are not necessarily any resources available by which that labour can be indirectly absorbed. The consumer pays the price which brings the maximum aggregate return. Unless this price is lower than the price previously ruling, he cannot increase his expenditure in other directions. The price *need* not be lower, because, though *prime* cost may be lower, *supplementary* cost, for the volume actually sold, may be so much higher as to lead to no general lowering of cost at all. In other words, rationalisation undertaken on technological grounds without taking into account demand conditions may not increase the aggregate national dividend, and so may create an unemployment problem which it cannot solve. And we have no right to assume that the race of rationalisers never makes a mistake.

Returning now to the general problem, we necessarily employ concepts which are familiar to all students of economics.

(*a*) If the demand for an article has an elasticity greater than unity, a reduction in its price results in a more than proportionate increase in the quantity demanded. Thus, even in a rationalised industry, in which labour cost has been reduced, the greater the elasticity, the greater the derived demand for labour, and the greater, therefore, the opportunity for reabsorbing labour and of adding to the total quantity of labour employed. But *how much* labour will be needed, depends not only on the state of demand, but on the technical conditions in that industry.

(*b*) Even if the derived demand for labour *in this industry* has an elastictiy of less than unity, yet provided that the demand for the product of the industry has an elasticity greater than unity, the *indirect* derived demand for labour may have an elasticity greater than unity. For the machinery and other equipment used by the industry has itself to be created by means of labour,

and, if the output of the industry is expanding, it requires an expanding plant. Thus the increased demand for labour in equipment industries, which marks the first stages of a rationalisation movement calling for large quantities of new equipment, may continue *after* the first stages have been passed. But too much must not be based upon this. For if rationalisation is a continuous process, it will affect not only the industries supplying consumers' goods in the narrower sense, but also the industries subserving these industries.

Optimistic interpretations of the rationalisation process will generally be found to be based upon the assumption that what is true in some cases is necessarily true in all. The demand for certain popular luxuries is no doubt highly elastic, but it is equally clear that the demand for agricultural products, for example, is not. There is no reason whatever to suppose, therefore, that an all-round cheapening of products already available will necessarily absorb *all* the labour unemployed in consequence of technical changes, though no doubt that will be the case to some extent. But to what extent is unfortunately unknown.

S. 7. Nevertheless, is it not legitimate to argue with Babbage in the passage already cited that " as each new machine adds to these gratifications, new luxuries will open to his view " ? or with Professor Robbins,[1] that the elasticity of demand for labour in general is greater than unity ? Since rationalisation reduces the quantity of labour required for the production of the existing quantum of material welfare, in other words, will it not be possible to add to that volume of material welfare ? Or must we argue with Mr. G. D. H. Cole that rationalisation " might succeed in lowering substantially the cost of producing each unit of the national output : but it would only find itself unable to make use of the great new productive power of which it had become the master. For the problem of production cannot be solved unless the problem of distribution is solved with it ; and the lowering of the unit cost of production, unaccompanied by a pouring of fresh purchasing power into the pockets of the consumers, will only mean a more determined policy of restricting output and a widening circle of unemployment " ? [2]

But, *in the absence of falling prices due to monetary causes taking place coincidentally* (which, as we have already had occasion to point out, intensifies the employment problem), *rationalisation*

[1] " Economic Effects of Hours of Labour," by Prof. L. Robbins (*Economic Journal*, March 1929, p. 25).

[2] *The Next Ten Years*, etc., p. 116.

involves an increase of the monetary purchasing power in the hands of the consumer. So long as money incomes in general remain the same, the margin between money incomes and expenditure goes up, in those cases in which the elasticity of demand for products of the rationalised industries is less than unity; or the cheapening of the articles results in a larger aggregate consumption of them, or, if the articles in question are subject to quasi-monopolistic conditions, the same amount is spent on them as before, but profits in the industries producing them increase, and larger profits mean additional purchasing power in the hands of entrepreneurs. The problem as stated by Mr. G. D. H. Cole is not the real problem at all; the real problem is: what use will "consumers" make of the margin of purchasing power now available as a consequence of rationalisation?

If the answer to this question is that consumers will devote it to the satisfaction of new wants, then it will be true that in the long run rationalisation will not involve unemployment. But the run may be a very long one, not only because a transfer problem is involved, but because the newer industries themselves will not in all probability require as much labour as they might have, had not the whole atmosphere of industry been impregnated with the rationalisation spirit. From this point of view, an increase in the demand for those personal services which are least affected by the progress of mechanical improvement will help to solve the problem more easily than a demand for goods the production of which requires the direct application of labour to a smaller extent. The growth of the "service industries" in the United States has been expressly adverted to by the very able group of American economists who last year published their Survey of the developments of the last decade in the United States.[1]

But consumers *need* not devote their available resources to the satisfaction of new wants. They may decide to "hoard" their savings in the technical sense described by Mr. D. H. Robertson in his *Banking Policy and the Price Level;* or, in other words, they may desire to keep more of their resources in a liquid form. If this hoarding takes place on a large scale a cumulative pressure is exerted on the price level, and the difficulty of absorbing labour is *ipso facto* increased. In the ceaseless combat waged in the human mind between the desire for greater gratification on the one hand and the desire for greater security in the shape of holding free resources on the other, it is not at all times true that it is the former passion which gains the upper hand. At the present

[1] *Recent Economic Changes*, Vol. I, p. xvi.

moment it would appear as if the desire to abstain from additional consumption were more important than the critics of current standards of consumption would be prepared to admit.

However that may be, the problem of transfer that is in any case involved is one of sufficient difficulty. Contrary to general opinion, even in countries like the United States, with a high degree of labour mobility, transfer may involve not only considerable loss to the individual, but also considerable delay in point of time, as appears from an interesting piece of evidence presented by the Brookings Institute of Economics to the U.S. Senate Committee on Education and Labour in the course of their investigation of Unemployment in the United States in 1928–9.[1]

S. 8. We have now arrived at the point at which it is necessary to apply the foregoing analysis in a more directly practical manner.

(1) Since the rationalisation movement is international in

[1] *Summary of Testimony and Report of Institute of Economics of the Brookings Institution*, by Isidor Lubin, documented, pp. 500–1 :—

"An investigation recently made by the Institute of Economics of the Brookings Institution reveals that most of the displaced workers have great difficulty in finding new lines of employment once they are discharged. A survey of some 800 workers in three industrial centres revealed that the newer industries are not absorbing the jobless as fast as is usually believed.

"Almost one-half of the workers who were known to have been discharged by certain firms because of curtailment in employment during the year preceding were still without jobs when interviewed by Institute of Economics investigators. Of those still unemployed over 8 per cent. had been out of work for a year, and about one-half had been idle for more than three months. Among those who had succeeded in finding work, some had had to search for jobs for over a year before finally being placed. More than one-half of those who had found jobs had been in enforced idleness for more than three months before finding employment. Only 10 per cent. had been successful in finding new jobs within a month after discharge.

"The new jobs, moreover, were usually secured at a sacrifice in earnings. Some workers, to be sure, were fortunate enough to find employment which paid higher wages, as was made evident by the fact that about one-fifth of them were making more money on their new jobs than before discharge. Forty-eight per cent., however, were receiving lower wages and about one-third were earning just about the same amount as they formerly did.

"And what kind of jobs did these men finally secure? Trained clothing cutters with years of experience had become gasoline station attendants, watchmen in warehouses, timekeepers in steel plants, and clerks in meat markets. Rotary press operators were pressing clothes in tailor shops. Machinists were selling hosiery for mail-order houses. Welding machine operators were mixing salves for patent medicine manufacturers. A significant number of men admitted frankly that after some months of enforced loafing they had taken to bootlegging.

"It is evident that a large number of the workers now being displaced from industry are being forced into unskilled trades at a sacrifice in earnings and a consequent lowering of their standards of living. At the same time they are being made to bear the burden of unemployment, for which they are in no way responsible and over which they have no control."

character, and, since it undoubtedly results in most cases in a reduction of cost per unit of output, no single country engaged in international trade under competitive conditions can hope to contract out of its consequences, good and bad, except at the expense of its international trade. This is in itself a sufficient reason for pushing ahead with rationalisation in this country.

(2) In the short run, rationalisation is not a remedy for unemployment, but, on the contrary, is itself a factor in making for unemployment, except to the extent that it stimulates demand in the constructural and equipment industries. But since a loss of markets due to progressive reductions in prices by rationalised industries in other countries also adds to the volume of unemployment in this country, the short run evil of unemployment in this country changes in character, rather than grows in volume. Industries are in part depressed because local costs of production are too high and unemployment ensues. Rationalisation reduces costs, but until the lower costs have helped the industries in question to regain their market, *and expand it*, unemployment will remain. But unemployment resulting from rationalisation is a lesser evil than unemployment resulting from relative inefficiency.

(3) In the long run, since rationalisation effects a lowering of real costs, then, given a desire for a rising standard of life, there is no reason to suppose that the volume of unemployment will not again fall. But, in the absence of any definite knowledge of the elasticities of demand for different products, we cannot foretell in what directions an increased demand for labour will manifest itself. Both American and British experience would seem to show that the demand for labour in the existing body of industries is likely to shrink, absolutely in relation to the population, relatively in relation to the output; whilst every increase in the technical knowledge available to industry will make the demand for labour in relation to output smaller in the new industries, the rise of which we have every reason to suppose (to judge from past experience) will accompany reductions in real costs in the existing industries. Thus the occupied population in the future is likely to be less " industrialised " than in the immediate past; and the growth of trades and occupations outside the narrow concept of " industry " will continue as rationalisation proceeds.

(4) The most optimistic view of the situation must take into account the fact that a grave transfer problem is involved, and that monetary and other circumstances having nothing directly to do with the rationalisation problem may accentuate the difficulties of transition. The first and most obvious step in the

direction of ameliorative measures must therefore be an increase in the mobility of the working population.

(5) In estimating the probable duration of unemployment resulting from rationalisation, account has to be taken, not only of the state of technical knowledge, but of the movement of the population. Since rationalisation produces its most striking results when the aggregate demand for a product continually increases, a stationary population (and the most advanced nations are tending to stationariness of population) places a limit to the expansion of output in each of the several directions in which the economies of large scale production are most strikingly displayed. At the same time, the decline in the number of new entrants into industry, which is to be expected over the next few years, will diminish the immediate pressure. But it is quite possible that the normal level of unemployment will be higher in the future than in the past, in which case unemployment will cease to serve as an index of material well-being. The paradox of a rising standard of life with a higher level of unemployment may well be the result of the present tendency in industry.

(6) On the other hand, there are not wanting examples to show that demands for new products and services can be stimulated very quickly, provided they are sufficiently cheap; and there is therefore no reason to fear that we shall all "starve in the midst of plenty." What has been true of the motor-cycle, the motor-car, the gramophone, the radio, artificial silk, the cinema, the popular press, books, travel facilities, greyhound racing and the rest will surely also be true of the future. No doubt we shall have to give up the belief that "national power" is to be measured by a high percentage of occupied persons in a few "staple industries"; but just as we no longer think of measuring our "national power" in terms of agricultural output, so we shall gradually see that those countries which have the highest standards of life *ought* to be those employing the largest proportion of their populations in the supply of "luxuries." All that stands in the way are economic and ethical standards no longer appropriate to the tendencies at work.

(7) There is an obvious relationship between the progress of rationalisation on the one hand, and the possibilities of a shorter working day and higher earnings from labour on the other. The rise in the standard of living and the shorter working hours which have characterised the progress of industry in the last hundred years were both conditioned by increased productivity; though it may be true that unless Labour's demands had been made the

spur to further invention and discovery might have been in part lacking. But at any given moment a balance must be struck between the demand for higher earnings and the demand for more leisure, for, if both demands are pushed to such an extreme that, if either were granted, the whole benefit of increased productive power would be exhausted, then the grant of the one excludes the grant of the other; and if *both* were, under these conditions, *simultaneously* asked for and granted, a new disequilibrium of costs and prices would be set up, which would inevitably cause a new wave of unemployment until further advances in technique and organisation had been achieved.

A shorter working day and higher wage rates are, of course, frequently defended, not on the legitimate ground that society can afford them with increasing productive powers, but on the ground that they are *direct* means for reducing unemployment, because they "spread work" and stabilise "working-class purchasing power." Unless accompanied by increasing productivity, however, they are incapable of achieving these results; for a shorter working day without a larger output would either involve lower wages or rising costs per unit; and rising money wages without increasing productivity would also result in disequilibrium. But given increasing productive powers, it is possible to lower prices to the consumer and pay the same wages as before for a shorter day or, with the same lower cost to the consumer, pay a higher wage for the same working day. Growing productivity, in fact, gives society a margin to "play with," and this margin is the source out of which unemployment can be relieved. But we have no right to assume that the process works without friction or that the fears of the workers are based entirely on "prejudice and error." In the end, one must rest one's hopes on the known elasticity and responsiveness of capitalistic society; an organisation which was capable of surviving the shocks of the war and post-war period is hardly likely to perish because it is learning to turn the arts of production to still better use in the future than it did during the last one hundred and fifty years.

T. E. GREGORY

MACHINERY REPLACEMENT IN THE COTTON TRADE

WHEN a trade is subject internally and externally to examination in the light of post-war ideas of rationalisation and reconstruction, one of the questions most frequently asked seeks to discover whether the plant and machinery of that trade are up to date.

It is not simple to decide immediately what should be meant by this, and it may well be that many popular ideas upon the subject are far from true.

This memorandum is an attempt to discover the position of the Cotton Spinning and Weaving Mills of Lancashire in respect of their equipment.

There are two main causes presumably for the steady replacement of machinery, namely—

(1) Wear and Tear, and
(2) Obsolescence by the discovery of new processes.

Replacement for both of these causes might be expected to be accelerated in prosperous times, and retarded during slumps in trade.

I shall also endeavour to investigate the significance of this factor to both of the main causes of replacement.

1. WEAR AND TEAR

Accurate data of an exact type is almost entirely lacking, and it will be in the main necessary to depend upon certain tendencies and examine their agreement or otherwise.

I will consider in the first place the normal life of the Spinning Machinery.

Exact statistics do not exist in this country, but a useful examination has recently been published by the Association of Cotton Textile Merchants of New York, who have available figures from the Bureau of the Census which have the advantage of being comprehensive and authentic.

The total combined spindleage of Cotton Mills in the U.S.A. reached its peak in December 1924, when 37,939,772 Spindles were in position.

The decline from that point is as follows:

Dec.	1925	37,871,936	a decline of	67,836	Spindles
,,	1926	37,364,730	,,	507,206	,,
,,	1927	36,465,976	,,	898,754	,,
,,	1928	35,267,086	,,	1,198,890	,,
,,	1929	34,585,304	,,	681,782	,,
Apr.	1930	34,195,464	,,	389,840	,,
			Total	3,744,308	,,

After 1925 the rate at which Spindles are being reduced is:

1926	1·4	per cent.
1927	2·5	,, ,,
1928	3·4	,, ,,
1929	2·0	,, ,,
1930	3·45	,, ,,

Actually, dismantling is proceeding at a more rapid rate, for the figures include those new Spindles built each year.

The figures which are given in the Association's record were supplied by American Manufacturers of Textile Machinery, and show the following new equipment:

1925	343,292	Spindles
1926	217,264	,,
1927	496,192	,,
1928	255,192	,,
1929	320,784	,,

Combining the two figures we get a total of

1926	724,470	Spindles
1927	1,394,946	,,
1928	1,454,802	,,
1929	1,002,566	,,
Total	4,576,784	,,

An average of 1,144,196 Spindles.

Dividing this into the average number of Spindles gives the average life of an American Spindle to be 31 years.

This supposition would not be strictly true unless the number of spindles 30 years ago was equal to the present total.

Actually, there were only two-thirds of the present total

spindles then existing, but these have been worked at the beginning of the century very many more hours per day than at present and the spindle hours run and the consequent wear and tear is approximately the same. Further, although the spindleage 30 years ago showed a steady increase, there is no sign of a corresponding increase in the replacement figures of recent years.

The Spindles in America are divided into :

Ring Spindles,
Mule Spindles,

and there has been no material advance in the equipment of Ring Spinning, which would cause obsolescence of the actual Spinning Frames.

The replacement of Mule Spinning by Ring Spinning might be considered from some angles as an improved type of Spinning, and thereby would necessitate replacement of Mule Spindles by Ring for obsolescence.

The figures show :

1925	2,588,000	Mule	Spindles.	35,349,000	Ring	Spindles.
1926	2,588,000	,,	,,	34,997,000	,,	,,
1927	2,588,000	,,	,,	34,140,000	,,	,,
1928	2,587,000	,,	,,	32,955,000	,,	,,
1929	1,584,000	,,	,,	33,245,000	,,	,,

It is obvious that even if this last change be admitted as obsolescence, the small proportion of Mule Spindles renders it a small factor.

We may, therefore, form a general conclusion that the replacement life of American Spinning Spindles from Wear and Tear is about 30 years.

The measure of Cotton Spinning Machinery by the " Spindle " unit often disguises the fact that a very great deal of important machinery exists in the processes preparatory to Spinning, and afterwards in such processes as Winding and Beaming.

It seems necessary to examine :

(1) Whether the evidence available in England, unbacked by comprehensive figures, can indicate agreement with American figures.

(2) Whether the other processes of Spinning follow the " Spindle " trend.

It is a very difficult matter to arrive at the average age of the Cotton Mills of Lancashire, but the opinion of a leading Valuer is that the Buildings, Plant and Machinery average date is about

1895–98, the general average date of the buildings being earlier and the machinery later than this.

This is supported by an investigation of the exact records of 20,000,000 Spindles, which affords an important sample.

The average age of the equipment, including buildings, of these Mills is 1898. The general average of Lancashire Mills is therefore 30–35 years, and excluding the war period, 25–30 years.

It must be clearly understood that the dates given throughout in this investigation are the original dates of the construction of the machines.

There is some considerable difference in the views of textile machinists and those of Cotton Spinners concerning the significance of the age of machinery.

It is held by the Cotton Spinner that machinery 20 years old, if it has been well cared for, may easily be more efficient than the newest machines, provided no important change in principle has taken place.

I shall not attempt to examine which view is correct.

I have seen Mules of 1886 working well and giving productions equivalent to similar machinery 20 years newer, but I have also found that much money has been spent on old machines which would have bought completely new ones, and it seems probable that the latter expenditure would have, in the long run, been wiser.

In the opinion of a textile machinist:

> "... from my own experience and recent researches, it would appear that, provided the machinery has been run full time and has not during the period of its life been expensively modified to enable it to produce yarns different to which it was originally constructed to produce, it is mechanically desirable to renew it every 30–35 years.
>
> "... from a combination of various factors we find Mills working with machinery 70 per cent. of which is nearing the end of its really fully efficient life."

The following details are taken from an exhaustive investigation of just over 200 Companies containing 20,000,000 Spindles (over one-third of the Spinning Mills) and 50,000 looms, or one-fourteenth of the Weaving Sheds.

As almost all the Spindles are engaged upon Coarse and Medium yarns, the details cover almost two-thirds of the "American" section of the Trade, and can be taken as fully representative of that section.

Certain of these Companies possess more than one Mill and comprise both Mule and Ring Spindles and Looms.

Detail of Buildings by date of construction:

	Before 1800.	1800–1850.	1850–1860.	1860–1870.	1870–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920
Buildings .	2	31	32	45	45	33	23	37	10	—
Extensions .	—	—	3	4	4	12	16	33	34	22

Totals: Buildings 258
Extensions 128

The date of the latest building is 1916, and of the latest extension, 1926.

NOTE.—In Mills not covered by this survey it is known that only three or four complete new Mills have been built since 1920 in the whole of Lancashire.

The years of the largest numbers of new buildings are:

1860 with 13
1870 ,, 11
1875 ,, 14
1885 ,, 9
1907 ,, 11

and the largest groups of three years:

1860–62 28
1874–76 27
1884–86 18
1906–08 25

These four groups comprising between them 38 per cent. of the total. There are no important groups of extensions until this present century, the most important being in the periods:

1905–1909
1912–1914
1916–1919

One would expect that the extensions were used mainly for the addition of:

(1) Card Room Machinery.
(2) Small Ring Spinning Plant to an existing Mule Spinning Mill.

The figures given later will be investigated to discover if this is the case.

Opening Machinery.—This section of a Spinning Mill has

undergone considerable modification during the last 50 years, and although the general principles are unchanged, detail has been very much improved. Machinists consider that the major parts of such machines would, by Wear and Tear, be in such condition that complete replacement after 30 years is necessary.

Detail of Opening Machines by date of construction:

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	38	122	340	746	540	483	2269
Per cent. . .	1·4	5·4	15·0	33·0	23·9	21·3	100

The percentage which is past this standard of efficient life is 21·3 per cent., and the percentage which has not yet reached half its life is 28·4 per cent.

Replacement has been carried out for the last few years at a steady rate of 2 per cent.

Carding Engines.—These machines, of which the Mills in question possess 17,140, have altered little since the Flat Card was introduced. These machines are fully rigid, but owing to the essential fact that they must be capable of close accurate setting in their various parts, they demand a higher standard of mechanical efficiency and a more regular specialised attention than the Opening Machines. Their full life is considered to be 30–35 years.

Detail of Carding Engines by Date of Construction

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	130	1,097	4,137	6,473	3,418	1,885	17,140
Per cent. . .	0·8	6·4	24·1	37·8	19·9	11·0	100

The percentage which has had 30 years of life is 31·3 per cent.

Replacement is proceeding at a diminishing rate, which over the last five years is less than 1 per cent. per annum.

Draw Frames.—These are probably the simplest machines in the whole range of Textile Machinery. They are semi-flexible machines, and with periodic lining up should be good for 30 years.

Detail of Draw Frames by Date of Construction

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	45	220	444	606	555	151	2,021
Per cent. . .	2·2	10·9	22·0	30·0	27·5	7·4	100

The figure which has had 30 years of life is 35·1 per cent.

Replacement is proceeding at the rate of approximately 1 per cent. per annum.

Combers.—These machines are in a class by themselves, and demand constant attention by an expert. Their life under good conditions is similar to the preceding machines. Only 10 per cent. of the Mills examined contain these machines.

Detail of Combers by Date of Construction

	Before 1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	Nil	Nil	28	194	224	446
Per cent. . .	—	—	6·3	43·5	50·2	100

In this case, unlike all others, the number of machines of recent date is larger than in any other of the ten-year periods. It would be unwise to attach too great importance to this, but the fact that 93·7 per cent. of the machines are less than 20 years old is an indication of the unique position occupied by this type of machine.

Speed Frames.—These machines are fully flexible and their efficiency is impaired if they are not kept in good alignment. Modern practice has lengthened the machines steadily, but otherwise their detail is little changed.

	Before 1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	556	1,699	2,316	3,442	2,443	899	11,355
Per cent. . .	4·9	15·0	20·4	30·3	21·5	7·9	100

Here, 40·3 per cent. of the machines have had more than 30 years of life.

Spinning Machinery

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
Mules.							
No. of Machines .	144	1,364	1,320	3,152	1,447	297	7,724
Per cent. . .	1·9	17·7	17·1	40·8	18·7	3·8	100
Rings.							
No. of Machines .	—	485	1,624	3,310	2,229	1,138	8,786
Per cent. . .	—	5·5	18·5	37·7	25·4	12·9	100

Although headstock parts replacements are often somewhat heavy, it is probable that the Mule has the longest life in the whole range, and hundreds of the Mules installed 40 years ago are still working quite satisfactorily.

The Ring Frame is a simple machine, and ordinary mechanical attention should enable it to keep running efficiently for 35–40 years.

Finishing Machinery.—Finishing Machinery comprises a varied selection of machines, such as Winding, Beaming, Reeling, etc. These are nearly all comparatively slow-running machines with few moving parts, and with proper oiling should continue to work almost indefinitely. The figures show :

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	30	65	479	1,311	1,174	619	3,678
Per cent. . .	0·8	1·8	13·0	35·6	31·9	16·9	100

The proportion of machines of less than 30 years' life is comparatively high.

It has been suggested that this is not due so much to the more modern machines in Lancashire as a whole, as to a change of practice. Winding and Beaming was originally done by the Weaving firm, but as Ring Spindles have increased the Winding and Beaming Machinery has been installed by the Spinning Mills. This would mean that the Winding and Beaming Machinery in Weaving Sheds is of much older date than in Spinning Mills. Experience of the machinery content of Mills would support this view, but a sufficient quantity of data is not available to support it with figures.

The above survey covers the whole of the Spinning Machinery.

A similar investigation has been made into the Weaving Section, which has been divided into :

(1) Preparatory Machinery, and
(2) The Looms proper.

The figures for the Weaving Preparation Machinery are :

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	19	33	34	66	146	123	421
Per cent. . .	4·5	7·8	8·1	15·7	34·7	29·2	100

The percentage of machines of less than 20 years' date is high.

For *Looms*:

	1860–1880.	1880–1890.	1890–1900.	1900–1910.	1910–1920.	1920–1930.	Total.
No. of Machines .	5,956	6,597	7,045	12,327	12,546	2,571	47,042
Per cent. . .	12·7	14·0	15·0	26·0	26·6	5·5	100

The average age of the Looms is earlier than any of the other machines, and in the Mills examined over 1,000 more than 60 years old are at work.

The Peak Periods of Replacement.—An examination of the peak years of replacement reveals the influence of prosperous periods. The significance of the 1906–9 period is particularly noticeable.

Details have been taken out of the leading three groups for all machines, with the following results:

	Opening Machinery.	Cards.	Combers.	Draw Frames.	Speeds.
Largest Replacement . .	1906–08	1906–08	1909–11	1911–13	1907–09
2nd Largest . .	1912–14	1909–11	1924–26	1907–09	1910–12
3rd Largest . .	1919–21	1898–00	1917–19	1891–93	1891–93
Per cent. of whole, comprised by these three groups	38	34	67	43	34

	Mules.	Rings.	Finishing Machinery.	Weaving Prep.	Looms.
Largest Replacement . .	1907–09	1906–08	1906–08	1920–22	1912–14
2nd Largest . .	1902–04	1911–13	1911–13	1912–14	1906–08
3rd Largest . .	1910–12	1920–23	1919–21	1924–26	1903–05
Per cent. of whole, comprised by these three groups	40	40	43	43	42

Apart from the 1906–9 period, which is by far the most important and which figures first in six cases and second in two cases, and is only missing in the secondary cases of Combers and Weaving Preparation, the 1910–14 period just before the war is important, appearing in nine cases and taking a leading part in Looms. The only post-war periods occurring are for Opening Machinery, Combers, Rings, Finishing Machinery and Weaving Preparation, in the last named two periods being prominent. The later period for Combers coincides with the change-over by American Mills to Egyptian Cotton. It is obvious that the prosperous periods have been responsible for a very large proportion of Lancashire

machinery. Owing to the leading position occupied by the above periods in the majority of the machinery sections it has been impossible to discover any direct relation between extensions to buildings and increases in carding engines and ring frames. The extensions in the absence of any more exact information might apparently have been necessitated by almost any of the machinery increases.

2. Obsolescence

The three main machinery developments in the Cotton Trade have been:

(*a*) Ring Spinning.
(*b*) Automatic Looms.
(*c*) High-speed Winding.

These factors are all stressed in the recent report of the Government Inquiry into the Cotton Trade, as necessary if Lancashire is to recapture her lost trade.

It seems important, therefore, to determine if possible the rate at which these developments are taking place in Lancashire.

(a) *Ring Spindles.*—Ring Spindles have been in existence for many years. The International Federation figures available are as follows:

	Estd. Total Spindles.	Actual Returns.	Mule.	Ring.
1908, Aug. . .	52,817,582	46,664,236	38,996,741	7,667,495
1911, Aug. . .	54,522,554	48,028,180	39,977,255	8,050,925
1914, Mar. . .	55,971,501	50,568,794	40,791,564	9,777,230

The returns after the war are in somewhat different form.

Estimated Total Spindles in Lancashire

	Mule.	Ring.
1923	44,043,000	12,538,000
1924	43,650,000	13,100,000
1925	43,651,000	13,465,000
1926	43,870,000	13,416,000
1927	43,816,000	13,509,000
1928	44,086,000	13,055,000
1929	42,776,000	13,141,000

From the pre-war figures it appears that Mule Spindles were increasing at the rate of 330,000 per annum, and Ring Spindles at the rate of 380,000 per annum.

As, however, the total estimated Spindles were increasing at

the rate of 570,000 per annum, it is obvious that the increased percentage of actual returns in the later pre-war years destroys the full significance of the figures.

If the larger percentage of returns was due to more returns from Ring Spindles, then the real rate of increase of Ring Spindles was less than appears, and the same applies to Mule Spindles.

Probably all that can be inferred is that the numbers of new Ring and Mule Spindles each year in the pre-war years were very similar.

It cannot, however, be inferred that the increase of Ring Spindles, small though it be, was entirely due to real obsolescence.

Wear and Tear would require the renewal every year of approximately 1½ million Spindles per annum, and worn-out Mule Spindles might be replaced by Rings. This is more nearly Wear and Tear replacement rather than Obsolescence, but since the Ring Spindles were only increasing at the rate of 300,000 to 400,000 per annum, the conclusion must be that the bulk of the worn-out Mule Spindles were being replaced by new Mule Spindles again.

Since the war the average reduction in Mule Spindles has been 200,000 per annum, but Ring Spindles have increased by 100,000 per annum. This increase has been spasmodic, and actually the 1929 figures show no increase over 1924. The figures must be accepted with some reserve, but it is obvious that no important increase is taking place in Ring Spindles, nor are Ring Spindles replacing Mules to any appreciable extent. The conclusion must be that progress in this respect is almost negligible.

(b) *Automatic Looms.*—Lancashire possesses between 700,000 and 750,000 looms for the weaving of Cotton Cloth. We have seen that many of these are half a century old.

The substitution of automatic looms is a radical change and involves very definite problems of the conditions of work.

A half-way house is the addition of attachments rendering the Lancashire loom semi-automatic.

There are, however, as far as I can ascertain, less than 20,000 automatic looms and attachments in Lancashire district, or under 3 per cent. of the trade.

In fact, of the leading makes I am unable to trace more than 17,000 in existence, but other adopted types of various firms probably exist in small numbers.

Figures have been quoted somewhat higher than this, but I have been so far unable to obtain confirmation of them.

Granted that half of Lancashire looms are engaged upon fancy

or other cloths for which the automatic loom may be considered less advantageous there are only 5 per cent. of automatics. It has been impossible to obtain information whether these existing automatic looms are replacements or additions, but the view has been expressed by a loom-maker that the majority are additions, and that where there have been replacements they have replaced worn-out looms.

There is no indication that the rate of introduction of automatics is increasing in Lancashire, though the figures for all other Cotton Weaving countries all show important and constant increases.

The continent of Europe contains 70,000 automatics of one single make, or four times the number of all types in Lancashire. An experiment, which may have an important bearing upon the introduction of automatic looms, is proceeding at the Higher Walton Mill of the Lancashire Cotton Corporation, where a battery of 40 looms of each of three types of automatic looms and a battery of 40 looms with each of three types of automatic attachments have been installed, together with a battery of 40 Lancashire looms, and these 280 looms are to be worked for an extended trial under exactly similar conditions. The results of the experiment should be of great moment to Lancashire as a whole.

(c) *High-speed Winding.*—Here again the available data is most scanty, and what I have been able to obtain by direct inquiry is difficult to place in an available form.

No figures exist for the number of Winding Spindles in Lancashire, but by using several different methods and applying it to the figures available, it appears that there are at least 2½ million Winding Spindles engaged upon Winding for both Warps and Hosiery Yarns.

Until the introduction of High-speed Winding, the most important change was the replacement about 1910 of winding overhead instead of from the side of the ring bobbin on the upright spindle machine. Since 1910, 250,000–300,000 Spindles have been converted, representing 10 per cent. of the estimated Spindles in existence, by a leading firm of makers. The introduction of High-speed Winding since the war was a most important innovation, but the progress so far has been slow. I can only find definite information concerning the introduction of 17,000 Spindles into the United Kingdom, and of these probably one-third are outside Lancashire.

With some reserve I believe that the number of High-speed

Winding Spindles in Lancashire Mills is to-day about 10,000–12,000, or $\frac{1}{3}$–$\frac{1}{2}$ per cent.

The number in existence in the whole world is between 120,000 and 180,000 Spindles.

As an indication of the rate at which High-speed Spindles are being introduced into this country, I am able to give the figures for the leading makers.

Of their spindles in place, the percentages installed by years are as follows:

	England.		The World.
1927 . . .	13·8%	1927–28 . . .	18·2%
1928 . . .	24·9	1928–29 . . .	31·8
1929 . . .	28·9	1929–30 . . .	50·0
1930 (9 months) .	32·4		

In the survey of the Mills for which the earlier figures were given, less than 0·1 per cent. of the Winding Spindles were High-speed. It is interesting to note that the Mills so far absorbed by the Lancashire Cotton Corporation contained 400 High-speed Winding Spindles only.

The number now in possession of the Lancashire Cotton Corporation is 3,000, or rather more than 25 per cent. of those possessed by all Lancashire. To state that the adoption of High-speed Winding Machines by Lancashire would remain at a very slow rate because their advantages were nullified to a great extent when only piecemeal orders were being produced, is only to state a fact which applies equally to other forms of progress and to emphasise that only by means of large-scale amalgamation can progress be hastened.

Conclusion

It would seem that several important morals can be urged in the light of the foregoing facts, but it is no part of my object in this survey to do so.

The data originally available for my purpose was almost nil. I have indicated in several places the deficiencies of that which I have been able to collect.

In spite of this, however, I am convinced that they will be the means both of filling a gap in the existent information concerning our greatest export industry, and of inducing others with more time and opportunity than I possess to delve into virgin soil.

John Ryan

Lancashire Cotton Corporation.

THE EFFICIENCY OF AMERICAN MANUFACTURING INDUSTRY

In recent years a flood of statistical material bearing upon productivity and efficiency in American industry has been made available.[1] It appears to have created the impression that the undeniable increase in material prosperity in that country, revealed by such indices as the steadily mounting income per head and real wages, has been largely due to an increase in the knowledge, skill, ability and energy of the personnel of industry,[2] although many other factors, such as the presence of a large home market or freedom from industrial disputes, are often mentioned as contributing to it.[3] The more cautious observers,[4] indeed, have attempted to distinguish between "true progress," which may be defined as the attainment of greater material results with the same effort, and increased productivity which arises from superiority of natural resources and conjunctural advantages. But the line between these two is vague enough to make errors common; and cause and effect are often indistinguishable, as, for example, in determining whether

[1] See in particular:

Recent Economic Changes, chapters by L. P. Alford and W. L. Thorp.

W. Thomas, "The Economic Significance of the Increased Efficiency of American Industry," *American Economic Review Supplement*, March 1928.

W. Thomas, "Growth of Productivity," *Proceedings Academy of Political Science*, 1926–28.

P. H. Douglas, "Mass Production and Wages," ditto, 1926–28.

P. H. Douglas and C. W. Cobb, "A Theory of Production," *American Economic Review Supplement*, March 1928.

R. G. Tugwell, *Industry Comes of Age*.

U.S. Census Monograph IX, "Growth of Manufactures."

C. R. Dougherty, "Installation of Machinery in U.S.A. since 1850," *Harvard Economic Review*, No. 6, p. 277 et seq.

Monthly Labor Review, July, Oct., Nov. and Dec. 1926.

Bureau of Labor Statistics, Report No. 474, "Productivity in Merchant Blast Furnaces."

[2] See W. C. Mitchell, *Recent Economic Changes*, p. 862.

[3] Most of these reasons are results rather than causes of the material prosperity. Even the presence of a large market, *i.e.* a large contiguous and densely populated land area, seems to have been over-stressed. The area, indeed, is so large that the movement of industries from one part to another, in order to save transport charges, is one of the chief causes of depressed industrial localities; and land transport is much more expensive than carriage by sea.

[4] See J. M. Clark, "Inductive Evidence in Marginal Productivity." *American Economic Review*, Sept. 1928.

the increased use of machinery has arisen because of large profits to be made therefrom or large profits because of increased mechanisation. It becomes pertinent to attempt, therefore, some further analysis of the form which this alleged efficiency has taken, its reactions upon the process of distribution of wealth, and its connection with such peculiar elements in American industrial life as the doctrine of high wages, the economic isolation of the country and the intense utilisation of capital equipment.

I

Perhaps the most widely quoted indices in these discussions are those which show the aggregate physical output and the physical output per person employed. They disclose a very remarkable increase of productivity per wage-earner, over manufacturing industry as a whole and in the vast majority of industries taken separately. Now, by comparing physical production with deflated wages and salaries paid in manufacturing industry it is possible to deduce what changes have taken place in labour costs per unit of output. This is shown in Table I. In its compilation the greatest difficulty was that of discovering some satisfactory method of adjusting the wage bill for changes in prices. Since the purpose is to determine the labour costs, *to manufacturing industry itself*, per unit of manufactured goods, it would seem to be inaccurate to deflate by the cost of living index-number. What is wanted is the proportion of the total manufactured goods which would pass to the wage-earner if he spread his income over nothing but manufactured goods of every description.[1] The most suitable index seemed to be that prepared by Douglas,[2] which shows the price movement of nine main groups of manufactured goods and is based upon the Bureau of Labor's price statistics. Certain other points in Table I ought to be noticed. Perhaps 1921 ought to be eliminated from consideration as it was a very abnormal year. Column 5 is undoubtedly a more reliable representation of labour costs than column 4, since the change in the structure and administration of industry since 1899 has increased the importance of salaries in total cost of

[1] The point is of great importance because the wholesale price and the cost of living indices have followed widely divergent courses since 1899, the latter having taken up a much higher level, in relation to 1899, than the former. This gap appears to be quite unexplainable save by the hypothesis that distribution costs have risen considerably. But the question of increasing or decreasing efficiency in distribution is outside the scope of this article.

[2] See *Real Wages in the United States*, p. 527.

production. And it is hardly necessary to point out that to compare crude averages and general aggregates over such a long period is extremely hazardous. In particular, the unit of production may have changed in kind. It probably represents something more complex and of higher quality now than it did thirty years ago.

TABLE I.

Growth of American Manufacturing Industry.

Year.	Physical Production.[1]	Manufacturing Industries.[2]			
	(1)	(2)	(3)	(4)	(5)
		Total Deflated Wages.	Total Deflated Wages and Salaries.	Wages Cost per unit of Output.	Wages and Salaries Cost per unit of Output.
1899	100	100	100	100	100
1904	122	124	127	102	104
1909	159	151	162	95	102
1914	169	178	196	105	116
1919	214	213	228	100	107
1921	170	221	243	130	143
1923	261	278	298	106	114
1925	275	278	302	101	110
1927	* 279	300	327	107	117

* Preliminary figures.

But, taking the figures for what they are worth, the results which emerge are arresting. There appears to have been no tendency for labour costs to fall between 1899 and 1927. Although there is evidence of some reduction in them in the post-war period, they appear to be higher in this period than in the pre-war. In any case, it seems that the progressive replacement of labour by machinery in American manufacturing industry has not led to any reduction in the proportion of the product which accrues to labour. This result is contrary to the general belief of what happens during a period of rapid industrial "mechanisation."

One general drawback to the table above is that it makes

[1] "Growth of Manufactures," U.S. Census Bureau Monograph IX, and *Recent Economic Changes*, p. 449. The index is based upon production figures covering 50 per cent. of the total number of wage-earners employed in manufacturing as a whole.

[2] Census Bureau. The figures cover the whole of manufacturing industry and therefore may not be strictly comparable with the index of production.

no allowance for the cost of raw material, and a direct comparison of labour costs with total costs may be misleading where the relation between the materials used and the goods produced changes appreciably. But even when wages and the "value added by manufacture" are compared, the returns to labour hold their relative position. For the argument which follows some account must be given of the "added value" statistics provided by the Bureau of the Census. They represent the value of products (*i.e.* the selling price at the factory of all products manufactured during the year, which, of course, may differ from the value of the products sold) less the cost of materials used (*i.e.* fuel, rent of power and heat, mill supplies and containers as well as materials which form a constituent part of the product). Values added by manufacture contain, therefore, in addition to wages and payments on capital in the form of interest or profit, such items in cost as depreciation, rents of offices and buildings other than factory or works, insurance, ordinary repairs, advertising and other sundry expenses. In Table II the wages paid in manufacturing industry are compared with the total "added values." In column I, deductions have been made from "added values" for depreciation.

TABLE II.

Proportion which Wages and Salaries bear to Net Value added by Manufacture in U.S. Manufacturing Industry.[1]

Year.	After Deduction for Depreciation.	Before Deduction for Depreciation.
1899	53	50
1904	54	51
1909	55	51
1914	58	54
1919	57	54
1921	64	59
1923	58	54
1925	56	52
1927	—	51

If the abnormal year 1921 is ignored there appears to be no tendency, either in the corrected or the uncorrected index, for the relation between wages and added value to change, the general movement in the post-war years showing a return to the position early in the century.

[1] P. Douglas, *Real Wages in the U.S.*, pp. 540–44.

An important corollary immediately suggests itself. If we assume that such costs as advertising, rents, insurance, depreciation, which are included in added value, have moved parallel with added values themselves,[1] then, since labour charges have remained a constant proportion of added value, the payments to property, whether in the form of interest or profits, must also have remained roughly a constant proportion of these values; which means that between 1899 and 1927 the cost,[2] excluding materials, of each unit of output has been split up in a constant fashion between labour and capital, using this latter term to cover both enterprise and saving. This condition may, of course, be looked at from two aspects. Considered from the angle of return, it means that the net income from the manufacturing activity involved in producing one unit of output has been divided all along in the same proportions between those who are paid wages and those who save or direct. From the other angle it means that, in so far as wages, interest and profits can be considered necessary costs, then these costs of labour, on the one side, and those of saving and enterprise on the other, have retained a constant relation within unit cost.

Further evidence of the tendency of labour " costs " to maintain or increase their importance is supplied by the manner in which the national income was distributed between labour and property, 1914–27. Of course national income is the product of more varied activities than those of manufacturing industry.[3] It is, nevertheless, suggestive to find that for the whole of economic activity the cost of labour—or, to look at it from the other angle, the return to labour per unit of output—had not decreased. Indeed Table III shows that it had actually increased,

[1] Most of them probably have. Thus in Table II above, allowance for depreciation does not make much change in the final result; and many of the items are probably small in the aggregate. Advertising, however, has probably increased out of step with the other items.

[2] Of course we immediately become involved here in the insoluble problem of determining what is cost and what is return. From the narrow point of view, the payment of interest in debentures is a cost, but not profits to shareholders. But in the long run these profits must be forthcoming if the business is to remain alive. And although large entrepreneurial profits are not usually considered costs, it may be that ability of the highest kind would not be forthcoming unless such profits could be made. Here we shall confine ourselves to a distinction, which lacks a clear-cut line, between what the worker gets out of manufacturing industry and what those who save or those who plan, experiment and risk with savings get out of it.

[3] M. A. Copeland, *Recent Economic Changes*, p. 775, estimates that only about one-fifth of national income derives from manufacturing industry.

suggesting that, outside manufacturing industry, labour costs have been forced up.[1]

TABLE III.

Proportions of Labour and Property Income in Total Realised Income in the United States, 1913–26.[2]

Year.	Share of Employees.	Share of Rents, Interest, Dividends and Profits withdrawn.
1914 . .	52	48
1921 . .	57	43
1922 . .	57	43
1923 . .	58	42
1924 . .	58	42
1925 . .	57	43
1926 . .	59	41
1927 . .	59	41

II

Having now explained the manner in which each unit of production has been divided between labour and "capital," it becomes necessary to consider what returns have actually accrued to each unit of labour and capital in recent years. The former can be disposed of summarily. Real wages and hourly earnings in manufacturing industry both show two very marked characteristics. Between 1899 and 1914 the position of the wage-earner improved little; between 1920 and 1927 there was a very rapid increase both in real wages and earnings per hour.[3]

It is more difficult to ascertain the direction of rates of return upon the property of industry—*i.e.* return upon the compound effort of saving and utilising the saving. The following line of approach, however, appears legitimate. It has been shown that the aggregate return on "capital" has roughly kept step with wages and hence with production. Whether the average *rate* of return on capital has been rising or falling will depend upon whether the volume of capital has been increasing more or less

[1] J. M. Clark has an observation, in another connection, which probably explains this. He points out that the increase of wages that naturally rests upon increased output in industries where increased supplies of capital are being invested tends to become general even in processes which are not mechanised and thus forces up labour costs there. (*American Economic Review*, September 1928, p. 452.)

[2] M. A. Copeland, *Recent Economic Changes*, p. 769. These figures must be accepted with reservation, since corporate surplus is not included as part of national income.

[3] See P. H. Douglas, *Real Wages in the United States*, pp. 205, 247.

quickly than production. Obviously, if aggregate investment has increased more rapidly than total physical production, the return on each unit of capital must have been falling and vice versa. The aim, then, must be to establish the connection between physical production and the volume of capital invested in industry.

The difficulties involved in measuring changes in the capital equipment of manufacturing industry are enormous and are very probably insuperable. If values are taken, the task of allowing for price changes immediately intrudes, for what it is necessary to measure is the total resources placed at the disposal of industry, and this, in any one year, consists of resources contributed at different times with different price levels ruling; and it is patently impossible to find any physical unit which would constitute an ideal index of capital investment. Primary horse-power established is most often used as a rough index of the increasing amount of material equipment in industry,[1] and this is given in Table IV below. One other investigation has been carried out to determine the capital investment in industry. Douglas, using the capital statistics based on value which are collected by the Census Bureau, and making ingenious allowances for price changes, has compiled an index of fixed capital—*i.e.* manufacturing machinery and buildings—from 1899 to 1922.[2] The value of the census material is very much open to doubt, but it probably shows trends more accurately than aggregates in any one year. Moreover, it appears generally to have been collected on a cost basis, but Douglas has made no attempt to allow for depreciation or obsolescence. This index also is given below. When the h.p. index is compared with it there is a rough similarity

[1] It need hardly be pointed out that such figures are, nevertheless, of very limited value for the purpose. The Census figures are for the rated horse-power of engines, motors and other prime movers. It makes no allowance for h.p. installed but never used. A change in the technique of power production—*e.g.* the replacement of steam engines by steam turbines—will appear to reduce the h.p., whereas the newer system is so much more efficient than the old that a lower rated h.p. can do the same work.

See W. L. Thorp, *Recent Economic Changes*, p. 175 ff., for other technical points.

The installation of power may, to some extent, be independent of the volume of machinery. Thus Census Monograph IX, "Growth of Manufactures, 1928," p. 29: "There has probably been a disposition in some industrial establishments to provide power more generously, thus increasing the installation of power for a given body of machinery . . . increases in primary h.p. considerably overstate the growth of manufactures." The h.p. figures for census years prior to 1919 include data for rented power other than electric, whereas the statistics for 1923 do not include such data.

[2] *American Economic Review Supplement*, March 1928.

between the two from 1899 to 1914, but after that they diverge sharply.

TABLE IV.

Growth of American Manufacturing Industry, 1899–1927.

Year.	Physical Production.	Total Primary h.p. Installed.	Production per h.p.	Douglas Index of "Fixed Capital."
1899	100	100	100	100
1904	122	134	91	138
1909	159	185	86	198
1914	169	222	76	244
1919	214	292	73	387
1921	170	—	—	431 *
1923	261	330	79	
1925	275	356	77	
1927	279	—	—	

* 1922.

But whichever index be taken it becomes apparent that the resources sunk permanently into industry have increased more rapidly than production, and that, in consequence, the rate of return on capital would seem to have been falling steadily since 1899.

III

The statistical material in the foregoing sections is beclouded with many uncertainties, but, assuming that it is satisfactory, the following generalisations appear to be true for the first quarter of the twentieth century.

1. From the point of view of production costs, the average labour cost per unit of output in manufacturing industry has not fallen to any marked degree. From the point of view of distribution this means that labour is obtaining the same share of total output as formerly.

2. Within the unit cost of production the relation between average labour and "capital" costs remains the same. From the other angle this means that the proportionate returns to labour and "capital" have been constant.

3. The investment of capital has increased more rapidly than physical production. This appears to be particularly the case since the end of the war.

From propositions 1 and 2 taken together it follows that the returns on capital have remained a constant proportion of total production. This conclusion, taken with proposition 3, leads to the result that the return on each unit of capital has fallen,

with the reduction perhaps more marked in the post-war than the pre-war period.

At first sight it appears remarkable that during a period of increasing material wealth the return upon each unit of capital investment should be falling. This situation is perhaps the more surprising for the post-war years, when national income per head has grown so rapidly. And yet there are certain facts concerning the period 1922–28 which support this conclusion. The yield on common industrial stocks and bonds have both fallen continuously and substantially in these seven years.[1] Rates for long-time money also showed an almost continual downward trend. It is evident that the resources for investment could be acquired more cheaply in 1922 than in 1929. It is not easy to obtain an estimate of the actual return on invested capital. Figures purporting to represent corporation investment are notoriously unreliable. Most indices of profits tend to exaggerate by failing to take into account losses as well as profits, and this factor is of particular moment in a dynamic industrial society where experiments are made freely and failures scrapped rapidly. Perhaps the most reliable index is that of incomes reported by corporations for income tax purposes, since it allows for the deficits of corporations reporting no net income.[2]

TABLE V.

Corporate Income Tax Returns in United States.

Year.	Net Income of all Reporting Corporations. (Millions of dollars.)
1920	5,874
1921	458
1922	4,770
1923	6,308
1924	5,363
1925	7,621
1926	7,504
1927	5,757

In view of the rapid accumulation of capital investment in the period the absence of a consistent upward trend in corporate income appears to lend some support to the view that rates of return were, at least, not on the increase. The figures of national

[1] See *Recent Economic Changes*, Chapter X.

[2] Quoted from *Recent Economic Changes*, p. 854, where several weaknesses of the figures are pointed out. Undoubtedly the statistics are affected by tax evasion, but the trend will not be affected unless there has been progressive evasion.

income arranged to reveal the movements of that part of the national income which accrues as rent, interest, dividend and profits—*i.e.* all payments other than those to employees—show that money incomes, adjusted to 1925 prices, have moved more slowly than horse-power figures.

TABLE VI.

Rent, Interest, Dividends and Profits Withdrawn [1] *and h.p. installed in Manufacturing Industry in the United States.*

Year.	Rents, Interest, Dividends and Profits. (In 1925 dollars.)	h.p. installed.
1914 . . .	100	100
1919 . . .	103	131
1920 . . .	96	—
1921 . . .	94	—
1922 . . .	103	—
1923 . . .	111	148
1924 . . .	117	—
1925 . . .	123	160
1926 . . .	122	—

It is not improbable, therefore, that running a business and investing money in a business became less remunerative per unit of capital invested during the period when real wages were rising. So far as the return to the entrepreneur is concerned, the theory that profits tend to a minimum through increasing stability in the economic system and the appearance of more general competition might well account for the fall here. But the reason for the fall off in the return upon saving, the cause of the situation in which the investor receives less on his unit outlay, is not so obvious. Some light will be thrown upon this, for the post-war period, in the next two sections.

IV

Following the theory of marginal productivity it would be expected that a change in the relation of labour and capital employed in production, such as that which has taken place in the United States, would, of itself, tend to cause the price of labour to rise and that of capital to fall. But, in actual fact, the preceding argument has little direct connection with marginal costs and efficiency. It deals solely with average costs and prices. Moreover, where fundamental technical changes are occurring and where modifications in supply and demand curves themselves are taking place, a static theory can have no useful

[1] Based on Copeland, *Recent Economic Changes*, pp. 763 and 769.

application. And there seems little doubt that in the past ten years the demand and supply schedules for both labour and capital have been under the influence of peculiar forces. To deal with labour first.

The influence which the restriction of immigration must have exercised upon the price of labour is a matter of general knowledge. But apparently other factors have also been in operation to explain the phenomenal post-war increase in real wages. Mr. Ford has for many years been arguing that it is sound economic policy to pay higher wages than the higgling of the labour market would produce, on the grounds that the increased income of the wage-earners enlarged and stabilised demand and thus made further industrial expansion possible. His views are apparently gaining wide currency in scientific, political, trade union and business circles. Quite recently Professor W. C. Mitchell has given it as his opinion that the recovery of American industry from the 1921 depression was hastened by the maintenance of wage rates.[1] Mr. Hoover, after the Stock Exchange crash in the late part of 1929, was successful in extracting from a strong committee of industrialists a promise that they would "not initiate any movement for wage reduction," and that "it was their strong recommendation that this attitude should be pursued by the country as a whole," as "the consuming power of the country will thereby be maintained."[2] The American Federation of Labor, approaching the question of wages from a different angle, reaches approximately the same position by demanding that "wages should rise proportionately with the increased productivity of labour." And finally, it appears that large groups of business men are equally wedded to the doctrine. If these views are as widely acted upon as enunciated they are bound to have important repercussions upon the price of labour. How far they are so acted upon it is impossible to determine;[3] and it is patent that merely to maintain wage *rates* during a depression does not maintain the consuming power of the wage-earners during a depression. As the widespread unemployment in 1930 showed, the business man, even if he does not reduce rates, can and does reduce the numbers he employs. So that, if the demand for labour is elastic, the policy of maintaining rates might well lead to a smaller consuming power in the hands of wage-earners

[1] *Recent Economic Changes*, p. 885.

[2] Quotations from the report issued by the Committee.

[3] There appears to have been a strong disinclination among employers to reduce wage rates during the depression of late 1929 and 1930.

than if the rates were flexible. The history of the 1921 depression and recovery suggests that what really happens is that, through the maintenance of wage rates, when business begins to expand again the increased numbers employed are taken on at the higher rates. Consuming power is, therefore, augmented not so much in the depression as in the succeeding boom. But it has been shown earlier that, in effect, the demand of the American Federation of Labor has been met and wages have increased with productivity. The development of this new element in the demand for labour will probably have a much greater effect in maintaining wage rates than aggregate wages paid. But, however wrong he may be in this belief, if the average business man considers that in paying wages he is buying two quite distinct things—labour and a stable and expanding market—the net effect may be to establish a demand curve for labour rather above the old.

In treating of the supply and demand for capital it is logically impossible to distinguish cause and effect. The prospects of increased profits from the use of more machines in production undoubtedly would tend to intensify the demand for capital. But, at the same time, the realisation of these profits would provide the means for supplying this capital, so that the apparent cause of the important changes in American industry was intensified by its own effect. From the side of property, however, the rapid increase in the volume of savings appears to have created an entirely new situation. Annual national savings, after allowing for price changes, seem to have been about twice as great in 1922–27 as in the thirteen years before the war and in 1925–27 more than double the pre-war savings.[1] This suggests new habits of and a new capacity for saving which are not likely to be modified so long as income per head is maintained. One important element in enlarging and consolidating the practice of saving is the tremendous amount of corporate saving which is imposed upon the involuntary shareholder. Copeland's estimate shows that, in 1925 in manufacturing industry, more than one-third of net income was added to surplus,[2] and a sample collected by the Federal Trade Commission of corporations, which might be assumed to be more than normally prosperous, only distributed one-third of their income in cash dividends.[3] This represents one part of national savings which is normally available for industrial extension, and within limits can be tapped without any regard

[1] *Recent Economic Changes*, p. 674. [2] *Ibid.*, p. 790.
[3] *Stock Dividends*, Federal Trade Commission, p. 11 et seq.

for the probability of the corporation being able to earn interest on it. The relation between the supply of capital and its price appears, therefore, to have been radically modified in two directions: saving by the individual has become much easier, and the individual, because of corporate practice, has much less control over the volume of saving effected by him. It seems likely that a new supply curve for capital, rather below the old, now represents the position in the market for new capital.

It is possible that the mechanism for the distribution of wealth in the United States has been slipped into a different gear in the last ten years. The change is analogous to that which would be produced in a society in which economic activity was wholly regulated by the state, if a general wage increase were ordered and the cost of it met by reducing the rate of interest allowed on compulsory individual savings. But if this is the case, then attempts to plot changes in industrial efficiency by recourse to objective indices such as labour costs or capital costs become meaningless. That can best be explained by example. Suppose a given community in which 100 units are produced, and 60 accrue to labour and 40 to capital. Suppose, further, that there is a sudden change, from whatever reason, so that the distribution is now 70 to labour and 30 to capital—output and the methods of production remaining the same. Then the only available methods of determining manufacturing efficiency would record changes in it. The only satisfactory test, however, would be, not labour cost or capital cost, but the total income of the community. If this latter index be employed, then any hope of estimating changes in the ability of the personnel of industry or the efficacy of machine methods is destroyed, since an increase in national income might arise from (say) the discovery of more convenient natural resources, the influence of which it would be impossible to distinguish from those of increased efficiency, which could be regarded as progress consciously planned. This appears to be the fundamental obstacle in interpreting the American figures. If labour costs have not fallen, is this because labour has not become more "efficient" or is it because the process of distribution has been modified? If the return on capital has fallen, is this because savers have become more efficient—in the sense that they can save one dollar with less effort than previously—or because less productive gain accrues from investment than formerly? Is America rich because it *is* rich in materials and sources of power, or is it rich because it has made itself rich? In recent years the entrepreneur in the United

States has apparently rendered more difficult the answers to these questions by influencing the mechanism of distribution in two ways: firstly, by offering a price for labour which he believed was a composite price for labour effort and a potential market; secondly, by making a large body of capital savings an automatic process independent of prices.

V

The nature of the problem which faces us may be put into simple concrete terms. Suppose, for example, the technical methods and system of organisation of American industry had remained unchanged between 1920 and 1929. Suppose that, when businesses and industries had expanded, they had simply duplicated the existing machines and factories. How much poorer materially would the United States have been than it actually is? Yet a final answer to this question stubbornly resists all statistical inquiry. If, indeed, industry has become more efficient one would have expected costs, and with them prices, to fall. The use of the price index, however, is complicated by possible variations in the volume of circulating medium, and in any case there was no appreciable fall in prices in 1922–28.[1] Every objective

Indices of Wholesale Prices in United States.
(1926 = 100)

Monthly Average.	Raw Materials.	Semi-manufactured Articles.	Finished Products.
1922 . . .	96	99	97
1923 . . .	99	119	99
1924 . . .	98	109	96
1925 . . .	107	105	101
1926 . . .	100	100	100
1927 . . .	97	97	95
1928 . . .	99	97	97

test of industrial efficiency appears to present theoretical weaknesses; and many of the apparent conclusions to be drawn from the statistical material which has been presented are surprising and inconsistent with general opinion and common observation. So much so that perhaps the strongest presumption of all is that the statistical material available, particularly concerning physical production and labour costs, is not reliable when used for com-

[1] The Bureau of Labor indices of wholesale prices show that the prices of finished products rose until 1925 and have since declined to about the 1922 level, following, in a rough fashion, the prices of raw materials.

parisons over long periods during which industrial technique and organisation have changed rapidly. But if generalisations, based on statistics, are to be made of the trend of efficiency in American manufacturing industry, the following suggestions carry weight:

1. American industry can be shown to be increasing in efficiency only in a special sense. Labour costs have not fallen. It is true that average physical production per wage-earner has risen considerably. Who would argue, however, that an individual business had increased its efficiency by increasing its output per worker without taking into account the cost of the machinery which had made it possible? Undoubtedly the change which has come over American industry has been helped by the swelling of the volume of savings. Mechanisation has been pushed to a point which would otherwise have been impossible. This would suggest that the real efficiency at the back of the American situation is that of the individual savers, who now do the same thing for a lower price. Yet even the increased efficiency of the savers is, to some extent, action enforced by the policy of corporations in accumulating reserves. Whilst industry has been using more capital the rate of return to it has been falling. This must partly be due to the use of the capital in less and less remunerative directions. But this movement would also be consistent with its uneconomic and wasteful use. The possibility of uneconomic investment merits more than passing notice.

It is to be expected in a period of industrial development so rapid as that of 1920–30, that a good deal of inefficiency would creep in and be tolerated because of the general prosperity. In many directions uneconomic developments are to be observed.[1] The frantic speed at which mergers were formed merely in order to make gains from the sale of securities brought into being many economic units which were technically and commercially ill-conceived.[2] Many of the biggest concerns, perhaps to the greatest extent in the automobile industry, found themselves in receipt of so large a net income that, with the habit of saving,

[1] See *Waste in Industry*. Committee of the Federated American Engineering Societies.

[2] For some account of this see an address by W. L. Thorp "Mergers and the Concentration of Industry." It is also worth while remarking a special inquiry undertaken by the Dow Jones agency, which shows that the stocks of a group of representative mergers formed 1928–29 had declined 60 per cent. between their high price of 1929 and August 1930. The reduction for all corporations was only 39 per cent. Apparently the depression of 1930 is already bringing liquidation and revealing the technical weaknesses of many mergers formed in the boom.

they were tempted to branch out into vertical and lateral integration, which is of doubtful advantage.[1] Prosperity leads to over-building, particularly where capital at a low price is plentiful, and there seems plenty of evidence of increasing over-capacity in many American industries.[2] One form of waste, often overlooked in a period of rapid expansion, takes the form of excessive experimentation, which the general spirit of optimism produces, and which leads to nothing. Machinery is scrapped earlier, lines of goods which have been advertised in the market discarded more promptly than is perhaps economically justified; more small businesses start and fail. It may be, therefore, that American industry is making an inefficient use of capital; that the price offered for capital is falling partly because the supply has increased but partly because the demand has decreased.

2. The manner in which labour costs have been maintained raises the question of the future of American exports. In most other industrial countries since 1920, the aim has been to force down wage rates in the hope of cutting labour costs. How can the United States hope to export, in order to meet the surplus capacity which is developing in many industries, if labour costs are maintained at their high level? The answer appears to be

[1] See the writer's "Factors in Industrial Integration," *Quarterly Journal of Economics*, August 1930.

[2] The measurement of surplus capacity is extremely difficult, and such surplus obviously varies with such factors as demand price, the price of raw materials and wages. But in many industries there is such marked over-capacity that undoubtedly there must have been waste and reckless expansion. Thus in 1927, whereas the total installed capacity of saw-mills in the United States was 117 billion feet per year, the largest amount of lumber ever produced was about 46 billion feet (*Some Public and Economic Aspects of the Lumber Industry*, Report No. 114, U.S. Dept. of Agriculture, 1917, p. 60). Between 1923 and 1928 the wheat-flour milling industry showed an operation of only some 56 per cent. of output to capacity (see *Survey of Current Business*). The bituminous coal industry has for many years had an output capacity and a supply of labour at least 25 per cent. greater than was necessary to supply its peak demands (*Report of U.S. Coal Commission*, Part I, pp. 202–33). A special report by the Bureau of Commerce on the knitted outwear industry in Philadelphia showed that one-half the machines worked 50 per cent. of full time or less. Between 1926–28 the Gray-iron foundries appear to have been operated about half time (*Survey of Gray Iron Foundries*, U.S. Dept. of Commerce, Bureau of Foreign and Domestic Commerce, and *Trends in Foundry Production*, Bezanson and Gray). The shoe factories in U.S. in 1925 appeared to have a normal capacity of about 80 per cent. more than actual output (see Report by Boston Chamber of Commerce, *Shoe Manufacturing Industry of New England*). Even in steel production the average of the separate monthly figures, as shown by the Survey of Current Business, recording the percentage output to capacity, was, for the period 1926–1929, only 86 per cent. The automobile industry is a special case. Up to 1929 it was catering for a rapidly increasing market. But that market is bound to become satiated finally, and, when the industry is merely engaged in supplying replacements, it seems inevitable that over-capacity will appear.

that she cannot. The proportion which the value of exports of manufactured goods bear to the total production is shown below.

TABLE VII.

Relation between Production and Export of Manufactured Goods in U.S.A.[1]

Year.	Percentage Exports to Production.
1899	9·8–10·5
1904	8·6– 9·2
1909	7·3– 7·8
1914	9·3–10·0
1919	13·9–14·6
1921	9·8–10·3
1923	6·7– 7·0
1925	7·6– 8·0
1927	7·7– 8·0

The manufacturing industry of the United States was less dependent upon exports in the post-war years than at the end of the nineteenth century. It may be argued, of course, that the rapid expansion of the home market meant that producers found no need to enter into overseas markets. On the other hand, the decline in the relative position of exports has gone on despite the efforts of the Federal Government, since 1920, to develop such trade. It seems that the process by which wealth is now distributed in the United States and the maintenance of the present level of wages is very much dependent upon the tariff. With the tariff down the competition of other countries in which efficiency is sought by reducing labour costs would undoubtedly become severe. And if that happened the whole question of restricting the supply of labour by immigration regulation, which forces up wages, would come under discussion.

3. Thirdly, the basis of American prosperity, as it has been suggested above, raises the query of how long present trends can continue. The fifteen years before the war was a period in which real wages increased very slowly and labour costs were constant. The post-war period has been one of real wages rising much above the pre-war average, with labour costs also above pre-war. Can the United States continue at this level of labour costs? The answer seems to depend upon the future of the supply and demand for labour and capital. Will the theory concerning the economy of high wages survive a serious and prolonged

[1] *Commerce Year Book*, 1929, Vol. I. p. 104.

depression? Will corporations, in an increasing scale, be able to bluff the shareholder and impose unremunerative saving upon him? Will the increasing national income per head bring such heightened standards of living that the present scale of saving will be reduced? These are questions to which the depression which has followed the Stock Exchange crash of 1929 may give answers.

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MARGINS, EXPENSES AND PROFITS IN RETAIL TRADE IN THE UNITED STATES AS STUDIED BY THE HARVARD UNIVERSITY BUREAU OF BUSINESS RESEARCH

I

THE article on retail profits in the September 1929 issue of the ECONOMIC JOURNAL by W. R. Dunlop suggested the desirability of presenting for comparison a summary of the data gathered by the Harvard Bureau of Business Research on margins, expenses and profits of several types of retail business in the United States. The findings of the Bureau at some points agree with those of Mr. Dunlop; at others the divergencies suggest differences in English and American practices as well as possible differences in competitive conditions.

At the outset it may be useful to explain briefly the objects of the Bureau and its methods of procedure. The Bureau of Business Research was established in 1911 primarily for the purpose of obtaining teaching material for use in the Harvard Graduate School of Business Administration, founded two years earlier. Since the largest hiatus in the needed teaching information appeared to be in the general field of Marketing, the attention of the Bureau was directed to this field. After some preliminary investigation, the desirability was seen of determining reliable standards for the cost of doing business in retail and wholesale trade to provide a yardstick for the evaluation of management policies and methods. Consequently, since its inception the Harvard Bureau of Business Research has been concerned primarily with studies of the margins, expenses and profits of retail and wholesale trade. In the initial investigation, directed to the ascertainment of the cost of doing business in retail shoe stores, the necessity immediately was discovered of establishing a uniform classification of accounts as the basis for collecting figures from individual merchants. On the basis of such a uniform classification of accounts the effort was made to obtain annual profit and loss statements from a representative sample of retail shoe stores. After the initial results of the retail shoe store study had proved the validity of this general approach, the same methods of procedure were applied during subsequent years to the following retail and wholesale trades :

Retail Automobile Tire and Accessory,
Wholesale Automotive Equipment,
Building Materials,
Department Stores,
Retail Drug,
Wholesale Drug,
Wholesale Dry Goods,
Retail Grocery,
Wholesale Grocery,
Retail Hardware,
Retail Jewellery,
Wholesale Paint and Varnish,
Wholesale Plumbing and Heating Supply,
Retail Stationery and Office Outfitting,
Wholesale Wall-paper.

In all except the preliminary years of this work, studies have been conducted with the active co-operation of trade associations and, in a majority of instances, with the financial support of these organisations. For all of these studies bulletins presenting the results have been published as soon as the Bureau was confident of the reliability of its data. This series of bulletins now numbers over 80, presenting conclusions drawn from the analysis of more than 17,000 profit and loss statements for retail and wholesale businesses. As yet no studies have been made of expenses and profits of chain stores.

All the Bureau's studies have been characterised by certain standard methods and policies, as follows :

(1) All reports are obtained at first hand from business firms, either by mail or by direct personal solicitation. Anonymous reports are not accepted by the Bureau.

(2) All data obtained from business firms are regarded and handled as strictly confidential. Reports are coded upon receipt, names of individual co-operating firms are never revealed, and findings are presented in such a form as to prevent the disclosure of the figures of individual firms, even anonymously, unless specific permission for publication of individual figures has been granted. Under no circumstances do members of an industry, students in the Harvard Business School, or any other persons outside the immediate organisation of the Bureau have access to the data secured from individual firms.

(3) Profit and loss statements are submitted to the Bureau on a standard form developed for each trade, with precise definitions of the items to be included under each heading.

(4) Practically all the data presented in the Bureau's findings are percentages of net sales, that is, gross sales less returns of merchandise by customers and allowances to customers.

(5) Gross margin represents the difference between net sales and the cost of merchandise sold. It includes amounts received as cash discounts on purchases and has been subjected to deductions for stock shortages and inventory depreciation.

(6) Salaries of proprietors, partners and executives, whether actually drawn or merely imputed, are included as an expense.

(7) Imputed rentals of owned buildings, as well as insurance, taxes, repairs and depreciation on real estate, and any other expenditures in lieu of rentals, are included in the rent figure.

(8) Interest on owned capital invested in the business, as determined from the net worth, exclusive of real estate, shown by the balance sheet, is charged as an expense at the rate indicated as the going one for the particular concern.

(9) The net profit and loss figures consequently represent profit in the sense understood by such economists as Walker, Ely and the late Professor Allyn A. Young, as well as a number of continental economists.

(10) In addition to the net profit or loss figures, data also have been presented in the Bureau's bulletins in recent years for net gain or loss. This figure includes returns in the form of interest as well as some incidental revenue; and it is this figure which the business man commonly thinks of as "net profit." The figure for net gain is given both as a percentage of net sales and also as a percentage of net worth (including real estate owned and used in the business).

(11) Stock turnover, or rate of stock-turn, as used in these studies, does not refer to the net volume of business, but rather to the number of times a year which the average stock is sold and replaced. This figure is computed ordinarily by dividing the cost of merchandise sold by the average inventory at cost.

(12) The so-called common figures presented in the Bureau's findings are not in the last analysis mathematically determined, but represent a combination, tempered by judgment, of the mode, the median and the average of the two middle quartiles as determined from a frequency distribution. Such a frequency distribution is shown in Table I, presenting the array of net profit or loss figures for 352 department

stores with sales less than $1,000,000 reporting for the year 1925.

TABLE I

Frequency Distribution of Net Profit or Loss Percentages 352 Department Stores with Sales under $1,000,000 reporting for 1925.

(Net Sales = 100%.)

Losses.										Profits.					
8·00 and over.	7·99–7·00.	6·99–6·00.	5·99–5·00.	4·99–4·00.	3·99–3·00.	2·99–2·00.	1·99–1·00.	Less than 1·00.	Less than 1·00.	1·00–1·99.	2·00–2·99.	3·00–3·99.	4·00–4·99.	5·00–5·99.	6·00–6·99.	7·00–7·99.	8·00 and over.
14·21	7·78	6·84	5·85	4·92	3·93	2·97	1·98	0·92	0·02	1·00	2·01	3·00	4·00	5·00	6·02	7·05	8·15
12·61	7·75	6·49	5·72	4·92	3·91	2·92	1·96	0·91	0·02	1·00	2·04	3·02	4·03	5·04	6·20	7·15	8·25
11·86	7·43	6·48	5·66	4·89	3·86	2·89	1·86	0·86	0·02	1·02	2·14	3·05	4·12	5·04	6·26	7·16	8·51
11·04	7·29	6·44	5·66	4·87	3·72	2·88	1·85	0·83	0·03	1·06	2·15	3·12	4·14	5·07	6·48	7·17	8·56
9·97	7·29	6·32	5·52	4·83	3·68	2·86	1·84	0·82	0·04	1·08	2·15	3·16	4·19	5·09	6·48	7·82	10·31
9·34		6·02	5·45	4·80	3·61	2·82	1·83	0·76	0·04	1·09	2·15	3·19	4·21	5·29	6·48	7·93	
8·01			5·42	4·75	3·61	2·82	1·83	0·74	0·05	1·19	2·36	3·20	4·21	5·30	6·85	7·94	
			5·30	4·74	3·44	2·80	1·82	0·69	0·05	1·21	2·42	3·21	4·27	5·30			
			5·18	4·69	3·40	2·65	1·76	0·68	0·06	1·21	2·43	3·22	4·28	5·39			
			5·12	4·67	3·37	2·64	1·75	0·65	0·07	1·22	2·44	3·24	4·31	5·49			
				4·61	3·32	2·53	1·65	0·64	0·07	1·26	2·52	3·25	4·32	5·55			
				4·58	3·32	2·46	1·55	0·59	0·10	1·27	2·52	3·26	4·37	5·65			
				4·56	3·31	2·41	1·54	0·56	0·15	1·27	2·58	3·31	4·40	5·70			
				4·41	3·26	2·40	1·53	0·44	0·16	1·29	2·58	3·31	4·49	5·71			
				4·38	3·17	2·36	1·52	0·37	0·20	1·30	2·58	3·33	4·61	5·74			
				4·18	3·16	2·35	1·51	0·25	0·21	1·30	2·59	3·39	4·74	5·75			
				4·16		2·34	1·51	0·23	0·25	1·31	2·62	3·49	4·75	5·79			
				4·16		2·32	1·47	0·22	0·27	1·31	2·62	3·60	4·81				
				4·16		2·27	1·40	0·13	0·29	1·37	2·62	3·76	4·95				
				4·11		2·23	1·39	0·11	0·32	1·39	2·63	3·77					
				4·03		2·15	1·38	0·08	0·33	1·39	2·65	3·78					
				4·01		2·14	1·35	0·07	0·34	1·40	2·69	3·79					
						2·13	1·32	0·05	0·35	1·47	2·69	3·80					
						2·12	1·27	0·05	0·35	1·51	2·71	3·83					
						2·08	1·26	0·04	0·36[1]	1·61	2·81	3·84					
						2·06	1·15		0·36	1·63	2·82	3·87					
						2·05	1·14		0·39	1·63	2·83	3·88					
						2·04	1·10		0·39	1·67	2·83	3·96					
							1·06		0·41	1·71	2·84	3·97					
							1·04		0·42	1·76	2·88	3·99					
							1·02		0·56	1·81	2·89						
							1·00		0·57	1·83	2·92						
									0·57	1·83	2·96						
									0·64	1·84	2·97						
									0·73	1·94	2·97						
									0·74	1·94							
									0·77	1·95							
									0·81	1·97							
									0·87	1·98							
									0·89								
									0·93								
									0·99								
							Interquartile Range										
7	5 12	6 18	10 28	22 50	16 66	28 94	32 126	25 151	42 193	39 232	35 267	30 297	19 316	17 333	7 340	7 347	5 352

Interquartile Average = 0·45
[1] Median = 0·36
Common Figure = 0·5

II

In Tables II to V, inclusive, are given the Bureau's common figures for recent years for the margins, expenses and profits of several retail and wholesale trades. In each instance there is indicated the number of firms reporting for the particular year. The proportionate size of the sample varies greatly. For instance, the 477 department stores and specialty stores reporting to the Bureau for 1928 presumably represented in sales volume not far

from 20 per cent. of the entire department store and specialty store business of the United States for that year. Also, the 151 automotive equipment wholesalers reporting for 1924 handled from 40 per cent. to 50 per cent. of the total wholesale automotive equipment business of the country for that year. In the case of the retail grocery trade, however, the sales of the 545 firms submitting figures for 1924 represented, of course, only a slight fraction of retail grocery sales for that year.

TABLE II

Common Figures for Department and Specialty Stores reporting to the Bureau for 1928.[1]

(Net Sales = 100%.)

	Department Stores.		Specialty Stores.	
	Net Sales less than $1,000,000.	Net Sales over $1,000,000.	Net Sales less than $1,000,000.	Net Sales over $1,000,000.
Number of Firms	251	162	36	28
Aggregate Sales	$86,520,866	$1,014,194,467	$14,779,030	$156,865,993
Total Salaries and Wages	16·1%	16·5%	15·5%	16·1%
Rentals	3·0	3·7	4·8	3·85
Advertising	2·4	3·2	3·4	3·85
Taxes	0·7	0·45	0·35	0·4
Interest	2·7	2·1	2·1	1·8
Supplies	0·85	1·5	1·0	1·5
Service Purchased	0·85	0·65	0·85	0·65
Unclassified	0·8	1·0	0·8	1·05
Travelling	0·4	0·45	0·7	0·65
Communication	0·3	0·35	0·4	0·35
Repairs	0·15	0·25	0·2	0·25
Insurance	0·5	0·3	0·5	0·4
Depreciation:				
Losses from Bad Debts	0·3	0·25	0·35	0·35
Other Depreciation	0·65	0·8	0·7	0·8
Professional Services	0·1	0·2	0·25	0·3
Total Expense	29·8%	31·7%	31·9%	32·3%
Gross Margin	29·6%	33·2%	32·8%	35·3%
Net Profit or Loss	Loss0·2%	1·5%	0·9%	3·0%
Total Net Gain:				
Percentage of Net Sales	2·7%	4·5%	2·8%	5·8%
Percentage of Net Worth	6·4%	9·7%	8·9%	15·5%
Rate of Stock-turn (times a year):				
Based on beginning and ending inventories	2·5	3·9	3·9	5·9
Based on monthly inventories	2·2	3·3	4·0	4·6

[1] Harvard University, Bureau of Business Research, Bulletin No. 78.

TABLE III

Common Figures for Retail Trades studied by the Bureau.[1]

(Net Sales = 100%.)

	Trade. Year.	Shoe. 1923.	Tire. 1923.	Grocery. 1924.	Jewellery. 1927.	Stationery and Office Outfitting. 1928.		
						General Stationery.	Commercial Stationery.	Commercial Stationery and Printing.
Number of Firms		499	83 [2]	545	230 [2]	146	40	67
Aggregate Sales		$72,209,000	$5,735,000	$88,038,000	$52,421,474	$25,277,566	$9,139,932	$21,021,436
Total Salaries and Wages		14·7%	12·4%	10·9%	17·8%	18·8%	18·9%	19·5%
Salesmen's Travelling and other Direct Selling		—	—	—	—	0·5	0·9	1·1
Advertising		2·2	1·5	0·35	3·4	1·4	1·3	1·3
Boxes and Wrappings		0·2	— [4]	0·6	— [4]	— [4]	— [4]	— [4]
Delivery		0·25	1·0	1·2	— [4]	1·4	1·95	2·1
Office Supplies and Postage		0·4	0·5	0·2	— [4]	0·7	0·8	0·8
Telephone and Telegraph		— [4]	0·3	— [4]	— [4]	0·3	0·4	0·4
Rent		3·5	3·0	1·3	5·0	4·5	3·8	2·7
Heat, Light and Power		0·6	0·7	0·3	0·85	0·6	0·5	0·4
Taxes [3]		0·5	0·3	0·2	0·95	0·5	0·4	0·35
Insurance [3]		0·5	0·6	0·2	0·8	0·5	0·45	0·4
Repairs and Depreciation of Store Equipment		0·6	0·9	0·45	0·9	0·7	0·45	0·5
Total Interest		2·7	1·8	1·1	5·5	2·4	2·2	2·0
Miscellaneous Expense		1·0	1·7	0·8	3·85	1·1	0·9	1·1
Dues, Subscriptions, Contributions to Charity		— [4]	— [4]	— [4]	— [4]	0·3	0·2	0·25
Losses from Bad Debts		0·2	0·8	0·4	0·55	0·3	0·45	0·4
Total Expense		27·4%	25·5%	18·0%	39·6%	33·5%	33·6%	33·3%
Gross Margin		29·1%	25·7%	19·8%	40·9%	34·5%	36·0%	34·9%
Net Profit		1·7%	0·2%	1·8%	1·3%	1·0%	2·4%	1·6%
Total Net Gain:								
Percentage of Net Sales		— [5]	— [5]	— [5]	— [5]	3·7%	4·3%	4·0%
Percentage of Net Worth		— [5]	— [5]	— [5]	— [5]	10·0%	12·5%	8·5%
Stock-turn (times a year)		1·9	4·5	10·0	0·9	2·5	2·8	— [5]

[1] Harvard University, Bureau of Business Research, Bulletins Nos. 43, 48, 52, 76 and 80.
[2] Merchandise departments only.
[3] Exclusive of charges on real estate.
[4] Included in Miscellaneous.
[5] Common figure not determined.

TABLE IV

Common Figures for Building Material Dealers reporting to the Bureau for 1928.[1] *(Firms Operating*

TABLE IV

Common Figures for Building Material Dealers reporting to the Bureau for 1928.[1] (*Firms Operating less than Three Yards.*)

(Net Sales = 100%.)

	Type of Yard.				
	Lumber.	Lumber and Mason Material.	Mason Material.	Lumber and Coal.	Mason Material and Coal.
Number of Firms	138	61	62	21	19
Aggregate Sales	$37,234,916	$18,927,548	$24,151,378	$4,132,774	$5,791,770
Wages of Yard and Warehouse Force	3·3%	2·8%	2·5%	3·2%	2·5%
Total Outward Transportation and Delivery	3·6	3·9	6·0	6·0	7·8
Executive Salaries	4·0	3·3	3·3	{5·1	3·1
Sales-force Salaries, Commissions and Bonuses	2·2	1·3	1·9	{2·3	1·5
Office Salaries and Wages	1·9	1·9	1·6		1·4
Total Buying, Selling and Administrative Salaries	8·1%	6·5%	6·8%	7·4%	6·0%
Travelling Expenses	0·35	0·3	0·55	0·15	0·35
Advertising	0·65	0·55	0·3	0·5	0·65
Office Supplies, Postage and Stationery	0·35	0·3	0·25	0·35	0·35
Telephone and Telegraph	0·2	0·2	0·2	0·1	0·2
Legal, Collection and other Buying and Administrative	0·25	0·2	0·2	0·15	0·2
Rent	1·9	1·8	1·6	1·8	2·5
Heat, Light, Power and Water	0·15	0·1	0·15	0·1	0·15
Taxes [2]	0·45	0·45	0·2	0·45	0·3
Insurance [2]	0·45	0·45	0·3	0·5	0·25
Repairs and Depreciation of Equipment	0·35	0·4	0·3	0·35	0·45
Total Interest	3·3	3·1	2·0	2·8	1·7
Dues, Subscriptions and Contributions	0·2	0·2	0·15	0·2	0·25
Miscellaneous Expense	0·5	0·45	0·45	0·4	0·45
Losses from Bad Debts	0·9	1·1	0·75	0·65	1·0
Total Expense	25·0%	22·8%	22·7%	25·1%	25·1%
Gross Margin	25·8%	24·4%	23·2%	26·7%	25·7%
Net Profit or Loss	0·8%	1·6%	0·5%	1·6%	0·6%
Total Net Gain:					
Percentage of Net Sales	4·7%	5·0%	2·7%	5·5%	3·6%
Percentage of Net Worth	8·5%	10·5%	7·8%	6·8%	10·0%
Stock-turn (times a year)	3·1	3·5	—[3]	3·0	—[3]

[1] Harvard University, Bureau of Business Research, Bulletin No. 81.

[2] Exclusive of charges on real estate.

[3] Common figure not determined.

TABLE V

Common Figures for Wholesale Trades studied by the Bureau.[1]

(Net Sales = 100%.)

Trade.	Grocery.	Dry Goods (Southern).	Drug.	Automotive Equipment.	Paint and Varnish.	Plumbing and Heating Supplies (Mid-West).	Wall-paper.
Year.	1923.	1923.	1924.	1924.	1926.	1927.	1927.
Number of Firms	501	71	129	151	62	134	54
Aggregate Sales	$677,709,450	$93,105,000	$204,298,000	$98,382,000	$30,219,000	$106,004,907	$14,270,362
Total Sales-force Expense	2·6%	5·7%	3·7%	8·2%	6·2%	5·0%	7·7%
Sample Book Expense	—	—	—	—	—	—	5·0
Advertising[2]	0·06	0·13	0·15	0·7	0·9	0·3	1·0
Other Selling	0·09	0·15	0·1	0·25	0·3	0·2	—
Wages of Receiving and Shipping Force	1·2	0·8	2·7	1·7	2·1	2·3	3·4
Warehouse Supplies	0·05	0·13	0·25	0·2	0·3	0·15	0·4
Outward Freight, Express and Parcel Postage	0·25	—[4]	0·2	0·25	0·2	0·15	1·0
Outward Truckage	0·65	0·16	0·35	0·35	0·95	1·05	1·7
Executive Salaries	1·0	1·8	—[5]	2·1	3·0	2·3	3·8
Office Salaries, Wages and Bonuses	1·0	1·0	—[5]	2·6	1·9	2·7	2·7
Total Executive and Office Salaries	2·0%	2·8%	3·4%	4·7%	4·9%	5·0%	6·5%
Office Supplies, Postage and Stationery	0·2	0·26	0·35	0·7	0·5	0·4	0·7
Telephone and Telegraph	0·07	0·05	0·1	0·25	0·2	0·25	0·3
Legal, Collection and other Buying and Administrative	0·15	0·45	0·2	0·5	0·4	—[6]	0·3
Rent	0·5	0·7	0·75	1·2	1·9	1·6	4·2
Heat, Light and Power	0·08	0·1	0·15	0·2	0·3	0·2	0·45
Taxes[3]	0·3	0·5	0·45	0·35	0·5	0·4	0·3
Insurance[3]	0·15	0·23	0·2	0·3	0·4	0·25	0·55
Repairs and Depreciation of Equipment	0·11	0·14	0·2	0·27	0·3	0·2	0·45
Total Interest	1·5	2·8	1·9	2·0	2·0	2·1	2·2
Losses from Bad Debts	0·4	1·0	0·35	0·7	0·6	0·55	1·1
Miscellaneous Expense	0·2	0·5	0·3	0·6	0·65	0·7	1·05
Total Expense	10·6%	16·6%	15·8%	23·5%	23·6%	20·8%	38·3%
Gross Margin	11·3%	17·6%	17·1%	24·8%	23·5%	20·2%	40·3%
Net Profit or Loss	0·7%	1·0%	1·3%	1·3%	Loss 0·1%	Loss 0·6%	2·0%
Net Gain:							
Percentage of Net Sales	Common Figures not Determined					1·7%	4·2%
Percentage of Net Worth	Common Figures not Determined					3·2%	11·2%
Stock-turn (times a year)	5·9	3·4	3·8	3·6	3·6	4·0	2·7

[1] Harvard University, Bureau of Business Research, Bulletins Nos. 40, 45, 50, 51, 66, 71 and 73.
[2] Exclusive of charges on real estate. [3] Included in Outward Truckage. [4] Not separated. [5] Includes catalogue. [6] Included in Miscellaneous.

Certain broad conclusions may be drawn from these tables. In the first place, net profit, in the sense defined by the Bureau, constitutes a relatively small percentage of net sales. This is true even of the retail jewellery trade with its stock-turn rate of less than 1 time annually; in fact the common net profit for retail jewellery stores in 1927 was only 1·3 per cent. of sales as compared with a common figure of 1·8 per cent. of sales for retail grocery stores in 1924, although the typical rate of stock-turn for these stores was 10 times annually. For the trades for which net gain (that is, profit in the sense understood by the man in the street) has been determined, the common figures are not particularly high either as a percentage of net sales or as a percentage of invested capital, the latter figure in 1928 being 10 per cent. for general stationers, 9·7 per cent. for the larger department stores, 6·4 per cent. for smaller department stores, 8·5 per cent. for lumber dealers, and 7·8 per cent. for mason material dealers.

As may be observed from Table V, net profit in the sense of return over and above interest on investment also is relatively small in wholesale trades, the common figures ranging from a net loss of 0·6 per cent. for plumbing and heating supply wholesalers in 1927 to a net profit of 2 per cent. for wall-paper wholesalers in the same year. For the retail trades the highest net profit was that exhibited for the departmentised specialty stores with net sales over $1,000,000 in 1928. The term "specialty store," it may be explained, is here used in the sense which it has acquired in the department store and dry goods trade in the United States, namely, a store with departmental form of organisation specialising in the sale of women's wearing apparel. For these stores in 1928 net profit commonly was 3 per cent. of net sales, and total net gain was 5·8 per cent. of net sales and 15·5 per cent. of net worth. The poorest profit showing for any retail trade was that made by department stores with sales less than $1,000,000 in the same year. These stores, as shown in Table II, commonly had a net loss of 0·2 per cent. of net sales and a total net gain of 2·7 per cent. of net sales and 6·4 per cent. of net worth. This set of figures, however, is for the year 1928; conceivably if 1928 figures were available for some of the other retail trades such as retail shoe stores and retail grocery stores, the 1928 results might not compare favourably with those for earlier years, particularly because of the growth of chain store competition in these fields.

Among the wholesale trades, as indicated in Table V, the best profit showing was that made by the wall-paper wholesalers in 1927, and the poorest showing was that of the plumbing and

[1] Harvard University, Bureau of Business Research, Bulletins Nos. 40, 45, 50, 51, 66, 71 and 73.
[2] Exclusive of charges on real estate.
[3] Included in Outward Truckage.
[4] Not separated.
[5] Includes catalogue.
[6] Included in Miscellaneous.

heating supply wholesalers in the same year. Again, if later figures were available for grocery and dry goods wholesalers, different results might be shown. In the case of wall-paper wholesalers, the higher profit may be accounted for partly by the fact that this trade represents to a certain extent a combination of wholesale and retail functions.

A comparison of the data for retail and wholesale trades indicates that expense ratios for wholesale trades generally are lower than those for the corresponding retail trades; for instance, 18 per cent. of sales for retail grocery stores as compared with 10·6 per cent. for wholesale grocery firms, 29·8 per cent. for the smaller department stores as compared with 16·6 per cent. for the wholesale dry goods trade. Among the wholesale trades for which figures are shown in Table V, expense ratios are noticeably higher for wholesalers of automotive equipment, paint and varnish, plumbing and heating supplies, and wall-paper than for wholesalers of groceries, dry goods and drugs. The reason for this divergence lies in the fact that these two groups of wholesalers perform somewhat different functions. Grocery, dry goods and drug wholesalers carry stocks of goods and sell at wholesale to retailers, who also carry stocks of merchandise and resell to final consumers. In the case of automotive equipment wholesalers and paint and varnish wholesalers, while part of their trade is with retail dealers carrying stocks of goods, a very considerable volume of their business is done through intermediaries of the artisan type, such as automobile repair shops and painters, who buy goods in relatively small quantities as needed for immediate use on particular jobs. This situation is also true of the wholesale plumbing and heating supply businesses, with the added condition that these firms habitually sell some merchandise in carload lots by means of direct shipments from manufacturers to large industrial users. In the case of wall-paper wholesalers the combination of wholesale and retail functions is illustrated most clearly, since these firms find it necessary to maintain elaborate showrooms where final consumers may inspect the merchandise before placing their orders with paper-hangers or interior decorators.

III

The figures in these tables are also of interest for the light which they throw on the spread between the manufacturer's price and the price finally paid by the consumer. In the case of groceries, for instance, these data indicate that out of the consumer's dollar

spent at retail over the counter the retail grocer takes 19·8 cents, 18 cents of which goes to pay his costs of operation, including his own salary and a reasonable return on his investment. There is thus left 80·2 cents which the retail grocer pays presumably to the wholesale grocer for these goods. This sum of 80·2 cents is, of course, the 100 per cent. on which the wholesaler's expenses and profits are calculated. Of this sum the wholesale grocer, as the figures in Table V indicate, takes out 11·3 per cent., or 9·1 cents, of which 10·6 per cent., or 8·5 cents, is required to meet his costs of operation, including remuneration for his managerial services and a fair return on his investement. Thus there is left approximately 71·1 cents which the manufacturer receives for the dollar's worth of merchandise purchased by the consumer.

At this juncture it may be permissible to go outside the scope of this paper briefly for the purpose of introducing some fragmentary evidence as to what part of this sum is required to meet the manufacturer's marketing costs. Table VI presents tentative common figures for the marketing expenses of grocery manufacturers reporting to the Harvard Bureau of Business Research for 1927. The number of firms reporting in this study was comparatively small, and the variation in types of product and methods of selling was extreme. Additional data, in fact, for a larger group of grocery manufacturers reporting for the year 1928 [1] indicated that the attempt to establish common figures for 1927 had been premature. The figures in Table VI, therefore, are not entitled to the same weight as the data for wholesale and retail trades in the tables previously presented. They do, nevertheless, indicate that for certain types of merchandise commonly handled by wholesale and retail grocers, manufacturers and packers may incur marketing expenses amounting to a fairly substantial percentage of sales. One of the middle figures shown in Table VI is that of 17·5 per cent. of sales for the marketing expense of packers of coffee, tea, chocolate, extracts and spices. To sketch a rather crude and hazy picture of distribution costs, overlooking all the elements of joint cost involved, suppose that this 17·5 per cent. is applied to the figure of 71·1 cents, arrived at previously as the sum received by the manufacturer from the wholesaler; this gives an additional marketing cost of 12·44 cents, leaving the manufacturer's cost of production, including overhead and profit, at 58·66 cents for goods costing the consumer $1. Disregarding the fact that these figures do not all apply to the same year, we

[1] See Bulletin No. 79, Marketing Expenses of Grocery Manufacturers for 1927 and 1928.

TABLE VI

Marketing Expenses of Grocery Manufacturers reporting to the Bureau for 1927.[1]

(Net Sales = 100%.)

	Product Groups.					
	I. Flour.	II. Meat-packers.	III. Canned and Bottled Foods.	IV. Coffee, Tea, Chocolate, Extracts and Spices.	V. Cereals, Crackers, Macaroni, Salt and Preserves.	VI. Soaps, Cleansers, Polishes and Disinfectants.
Number of Firms	7	9	13	15	14	11
Aggregate Sales	$54,166,227	$331,240,491	$40,009,555	$18,447,595	$230,034,343	$7,613,642
Sales-force and Brokerage :						
Total Sales-force	1·9%	2·0%	3·75%	7·0%	6·5%	7·0%
Brokerage	0·6	0·5	1·75	0·5	2·0	2·0
Total Sales-force and Brokerage	2·5%	2·5%	5·5%	7·5%	8·5%	9·0%
Sales Promotion and Advertising :						
Field Promotion	0·1%	Data Insufficient	0·5%	1·0%	1·7%	2·5%
Space Advertising	0·25		1·5	1·5	4·0	7·0
Other Sales Promotion and Advertising [2]	0·05		0·3	0·7	0·8	3·5
Total Sales Promotion and Advertising (except Administration)	0·4%	0·1%	2·3%	3·2%	6·5%	13·0%
Shipping, Transportation, Warehousing and Delivery :						
Shipping	0·5%	0·75%	1·5%	0·75%	0·8%	1·1%
Transportation	— [3]	2·3	3·5	1·5	6·0	6·0
District Warehousing, Local Delivery, and General Outward Traffic and Stock Control	0·6	0·25	1·0	0·75	1·7	0·9
Total Shipping, Transportation, Warehousing and Delivery	1·1%	3·3%	6·0%	3·0%	8·5%	8·0%
Credit and Collection :						
General Credit and Collection Expense	0·05%	0·02%	0·05%	0·05%	0·05%	0·05%
Losses from Bad Debts	0·2	0·08	0·15	0·25	0·15	0·15
Total Credit and Collection (except Administration)	0·25%	0·1%	0·2%	0·3%	0·2%	0·2%
Marketing Administration :						
Salaries and Wages	0·8%	0·7%	2·0%	2·5%	2·0%	5·3%
Office Expense	0·35	0·2	0·8	0·75	1·0	1·5
Travelling and Other Marketing Administration	0·1	0·1	0·2	0·25	0·2	0·2
Total Marketing Administration	1·25%	1·0%	3·0%	3·5%	3·2%	7·0%
Total Marketing Expense	5·5% [3]	7·0%	17·0%	17·5%	26·9%	37·2%

[1] Harvard University, Bureau of Business Research, Bulletin No. 77.
[2] Includes Free Deals, Direct Mail Advertising, Premium Advertising, and Miscellaneous Sales Promotion and Advertising—Home Office.
[3] Transportation not included.

thus arrive at an approximate estimate of about 42 cents as the distribution cost through certain marketing channels of goods for which the consumer ultimately paid $1. Of this rough figure of 42 cents it is to be noted that less than 2·5 cents constituted a pure profit to the distributors over and above compensation for managerial services and return on investment.

IV

To return to the consideration of retail margins, expenses and profits, Tables VII, VIII, and IX indicate trends in recent years in department stores and jewellery stores, the two retail trades in which the Harvard Bureau of Business Research has carried on its studies over the longest periods of time. While these figures were not for a completely identical group of firms reporting for the entire period, from year to year the proportion of repeat reports was substantially high.

Table VII, for department stores with sales over $1,000,000, and Table VIII, for department stores with sales under $1,000,000, indicate that over the period from 1922 to 1928 there was a tendency for the gross margin to increase slightly in ratio to sales and that at the same time there was a tendency for the rate of total expense, as well as for the rates of practically all the constituent items of expense, to increase more rapidly than did the gross margin. As a result, the rate of net profit (in the sense of return over and above interest on investment) for each group of department stores tended to decline after 1923. This tendency is rather startling in view of the noteworthy prosperity enjoyed by business in the United States over the period from 1923 through 1928, with the exception of the brief recession in 1924. By no means are all the causes for this conditon of declining profits in the department store field as yet apparent, but there can be little doubt that department stores over this period were adversely affected by the competition of specialty stores in certain types of merchandise and by the competition of chain stores in certain other types.

As indicated in Table IX, retail jewellery stores had their rates of gross margin adversely affected by the business depression in 1921, but after 1923 were able to bring this ratio back to the point where it had been for 1919 and 1920. In their total expense ratios there was an astonishing jump from a common figure of 32·7 per cent. in the prosperous year 1920 to a common figure of 43·5 per cent. in the depression year 1921. These figures show

* Includes Free Deals, Direct Mail Advertising, Premium Advertising, and Miscellaneous Sales Promotion and Advertising—Home Office. Transportation not included.

TABLE VII

Operating Results of Department Stores with Sales over $1,000,000 : 1922–1928.[1]

(Net Sales = 100%.)

	1922.	1923.	1924.	1925.	1926.	1927.	1928.
Number of Firms .	151	163	168	183	163	180	162
Gross Margin . .	32·0%	32·0%	32·1%	32·2%	32·6%	33·1%	33·2%
Salaries and Wages.	15·4%	15·4%	16·2%	16·0%	16·1%	16·4%	16·5%
Rent . . .	2·9	2·8	3·0	3·0	3·2	3·4	3·7
Advertising . .	2·9	2·9	3·2	3·1	3·1	3·3	3·2
Interest . .	2·1	1·8	1·9	1·9	2·0	2·1	2·1
Other Expenses .	5·3	5·5	5·8	5·9	5·9	6·2	6·2
Total Expense .	28·6%	28·4%	30·1%	29·9%	30·3%	31·4%	31·7%
Net Profit . .	3·4%	3·6%	2·0%	2·3%	2·3%	1·7%	1·5%
Net Gain :							
Percentage of Net Sales .	—[2]	—[2]	—[2]	—[2]	—[2]	4·4%	4·5%
Percentage of Net Worth .	—[2]	—[2]	—[2]	—[2]	—[2]	10·5%	9·7%

[1] Harvard University, Bureau of Business Research, Bulletins Nos. 37, 44, 53, 57, 63, 74 and 78.

[2] Common figure not determined.

TABLE VIII

Operating Results of Department Stores with Sales under $1,000,000 : 1922–1928.[1]

(Net Sales = 100%.)

	1922.	1923.	1924.	1925.	1926.	1927.	1928.
Number of Firms .	340	403	399	398	284	328	251
Gross Margin . .	27·8%	28·2%	28·5%	28·6%	28·9%	29·7%	29·6%
Salaries and Wages.	14·9%	14·2%	15·3%	15·2%	15·5%	15·9%	16·1%
Rent . . .	2·3	2·3	2·3	2·5	2·7	2·8	3·0
Advertising . .	2·1	2·0	2·2	2·2	2·3	2·3	2·4
Interest . .	2·6	2·5	2·6	2·5	2·6	2·7	2·7
Other Expense .	5·2	5·3	5·8	5·7	5·6	5·8	5·6
Total Expense .	27·1%	26·3%	28·2%	28·1%	28·7%	29·5%	29·8%
Net Profit or Loss	0·7%	1·9%	0·3%	0·5%	0·2%	0·2%	Loss 0·2%
Net Gain :							
Percentage of Net Sales .	—[2]	—[2]	—[2]	—[2]	—[2]	3·3%	2·7%
Percentage of Net Worth .	—[2]	—[2]	—[2]	—[2]	—[2]	7·2%	6·4%

[1] Harvard University, Bureau of Business Research, Bulletins Nos. 37, 44, 53, 57, 63, 74 and 78.

[2] Common figure not determined.

clearly what happens to the expense ratio of a retail business during a period when sales volume is adversely affected by price declines. Following 1921 the retail jewellery trade gradually brought its expense ratio down to a common figure of 36·4 per cent. in 1923; but thereafter, in common apparently with the department store trade, the retail jewellery business experienced

TABLE IX

Operating Results of Retail Jewellery Stores: 1919–1927.[1]

(Net Sales = 100%.)

	1919.[2]	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Number of Firms	100	182	190	171	290	254	172	211	230
Gross Margin	40·1%	39·1%	36·9%	38·6%	38·3%	39·5%	39·6%	40·9%	40·9%
Salaries and Wages	8·5%	9·8%	12·8%	17·3%	17·1%	17·7%	17·4%	17·1%	17·8%
Rent	4·0	3·9	5·4	4·8	4·5	4·8	4·8	4·9	5·0
Advertising	2·0	2·0	2·5	3·1	2·8	3·1	3·4	3·5	3·4
Interest	4·6	5·1	7·0	5·9	4·6	4·9	4·6	4·5	5·5
Other Expense	13·2	11·9	15·8	8·9	7·4	7·8	7·3	7·8	7·9
Total Expense	32·3%	32·7%	43·5%	40·0%	36·4%	38·3%	37·5%	37·8%	39·6%
Net Profit or Loss	7·6%	6·4%	Loss 6·6%	Loss 1·4%	1·9%	1·2%	2·1%	3·1%	1·3%
Net Gain: Percentage of Total Receipts	—[3]	—[3]	—[3]	—[3]	—[3]	—[3]	—[3]	—[3]	6·6%
Percentage of Net Worth	—[3]	—[3]	—[3]	—[3]	—[3]	—[3]	—[3]	—[3]	8·4%

[1] Harvard University, Bureau of Business Research, Bulletins Nos. 23, 27, 32, 38, 47, 54, 58, 65 and 76.

[2] Because of the statistical methods used in 1919, the figures for that year do not tie.

[3] Common figures not determined.

a gradual rise in the cost of doing business. The net profit figures shown in Table IX also indicate clearly the somewhat inflated profits of 1919 and 1920, followed by the sharp losses in 1921, and the gradual recovery in subsequent years to something approaching equilibrium. The effects of the cyclical movement of general business conditions no doubt were accentuated by the luxury character of the retail jewellery trade.

Perhaps the most significant question raised by the data in these tables relates to the rising tendency of the total expense ratio. Although the evidence presented is fragmentary at best, it is corroborated not only by data which the Bureau has obtained for other retail trades at intervals from 1914 to 1929, but also by the general experience of numerous business firms over the same period. Nor does it appear that to any extent these higher costs of distribution represent merely a shifting of functions from one sector of the marketing sphere to another, as, for instance, a rise in the retail cost of doing business being offset by a decrease in manufacturers' selling expense. Rather, the costs of distribution appear to have increased all along the line, at least in the sense that they require an increasing percentage of the consumer's dollar.

As regards the significance of this apparent rise in the cost of distribution, perhaps a digression may be permitted at this point to indicate that there are two schools of thought. The common attitude has been to deplore the increased costs of distribution and to attribute them to competitive waste, inefficiency, lack of foresight and general ignorance of marketing principles. The other point of view, which has gained some adherents in recent years, is that rising costs of distribution are an inevitable concomitant of the development of a machine civilisation. The cobbler making shoes by hand in his tiny shop 150 years ago had practically no recognisable marketing costs; but the great shoe factory of to-day finds that each increase in output, though it may reduce the cost of production, necessitates either the development of wider markets or the more intensive cultivation of existing markets, in either case with a resulting increase in marketing costs. Under these conditions, every saving in the cost of production from the development of new machines or new methods apparently is in a fair way to be offset, in part at least, by the increased cost of marketing. This school of thought also points out that the rising standards of living, the increasing requirements of consumers for all kinds of "services," and the varied phenomena of fashion change, all of which indubitably play their part in increasing distribution costs, are inextricably interwoven with the fabric of our machine civilisation.

The major difference between these two schools of thought is that the first regards increasing distribution costs as a hydra-headed monster, to be attacked and subdued at every point by every possible method; whereas the second would recognise a law of rising distribution costs, to be intelligently understood and

guided. Without indicating a preference for either point of view it may be fair to say that there has as yet been little opportunity for conclusively testing the notion that increasing costs of distribution are an inherent part of the industrial progress of Western civilisation. Distribution is still largely a matter of man power, whereas advances in productive efficiency have been achieved largely through the application of machine power. For the present, therefore, distributive enterprises tend to absorb the services of a larger and larger proportion of the total number of persons gainfully employed, simply because the worker's energy in this field is not multiplied by the power of the machine as it is in the field of production. So long as the scientific development of marketing processes thus lags behind the technique of the factory, marketing costs will increase relative to production costs. Imagination at the moment is not adequate to the task of visualising how machinery and machine methods might generally be applied to the task of distribution; conceivably the sales promotion efforts of the future will take to the air by radio and television. But if the machine approach to the problem of distribution should in the future prove in any respects feasible, we shall be in for some startling changes; and there will be an opportunity for a real test of the theory that distribution costs inevitably require a larger and larger portion of the consumer's dollar.

V

There is a widespread belief that large retail establishments are able to effect notable economies in operating costs as compared with small retailers. To test the validity of this assumption, it has been the practice of the Harvard Bureau in most of its studies in recent years to group the reporting firms according to their volume of sales and to determine for each of these groups common figures for gross margin, total expense and net profit. In Table X are shown typical figures resulting from several such groupings for various retail trades in recent years. Although the results are shown for only one year for each trade, it may be stated that the tendencies exhibited by these figures are confirmed by similar groupings which the Bureau has made for other years in the same trades.

The department stores reporting for 1928 are ranged in groups with sales volume running from less than $250,000 to over $10,000,000 annually. This grouping brings out clearly the tendency for gross margin to be higher for the firms with larger

TABLE X

Operating Results of Retail Businesses according to Volume of Sales.[1]

(Net Sales = 100%.)

Sales Volume	*Department Stores :* 1928. Less than $250,000	$250,000–$499,000	$500,000–$999,000	$1,000,000–$1,999,000	$2,000,000–$3,999,000	$4,000,000–$9,999,000	$10,000,000 or over
Number of Firms	121	69	61	55	42	40	25
Gross Margin	28·1%	30·4%	31·7%	31·7%	33·1%	34·3%	34·3%
Salaries and Wages	15·8%	16·0%	16·6%	16·3%	16·5%	16·7%	16·8%
Rent	2·7	3·0	3·5	3·3	3·9	3·7	3·75
Advertising	2·2	2·45	2·9	2·95	3·25	3·4	3·35
Interest	2·9	2·6	2·6	2·2	2·1	2·15	1·7
Other Expense	5·1	5·65	6·4	6·05	6·25	6·75	5·9
Total Expense	28·7%	29·7%	32·0%	30·8%	32·0%	32·7%	31·5%
Net Profit or Loss	Loss 0·6%	0·7%	Loss 0·3%	0·9%	1·1%	1·6%	2·8%
Net Gain :							
Percentage of Net Sales	2·3%	3·4%	2·8%	3·8%	4·5%	4·8%	5·8%
Percentage of Net Worth	5·0%	7·8%	7·8%	9·7%	9·2%	9·8%	12·1%

Sales Volume	*Lumber Dealers :* 1928. Less than $100,000	$100,000–$199,000	$200,000–$399,000	$400,000 or over	*General Stationers :* 1928. Less than $100,000	$100,000–$299,000	$300,000 or over
Number of Firms	32	44	35	27	77	46	23
Gross Margin	27·5%	25·3%	25·2%	25·0%	34·9%	33·8%	34·5%
Salaries and Wages	13·7%	10·7%	10·8%	11·3%	18·7%	17·5%	18·8%
Rent	2·2	1·9	1·8	1·4	5·0	4·1	3·8
Advertising	0·75	0·75	0·65	0·6	1·2	1·6	1·6
Interest	3·4	3·3	3·3	2·9	2·6	2·1	2·3
Other Expense	7·95	7·65	7·65	7·3	6·8	7·0	7·0
Total Expense	28·0%	24·3%	24·2%	23·5%	34·3%	32·3%	33·5%
Net Profit or Loss	Loss 0·5%	1·0%	1·0%	1·5%	0·6%	1·5%	1·0%
Net Gain :							
Percentage of Net Sales	4·0%	5·0%	4·7%	4·9%	3·8%	3·6%	3·6%
Percentage of Net Worth	7·8%	9·0%	7·6%	10·0%	9·5%	11·5%	8·8%

Sales Volume	*Retail Jewellery Stores :* 1927. Less than $20,000	$20,000–$49,000	$50,000–$99,000	$100,000–$499,000	$500,000 or over
Number of Firms	49	69	40	53	19

Retail Jewellery Stores: 1927.

Sales Volume	Less than $20,000	$20,000–$49,000	$50,000–$99,000	$100,000–$499,000	$500,000 or over
Number of Firms	49	69	40	53	19
Gross Margin	41·1%	39·6%	42·3%	40·8%	41·4%
Salaries and Wages	17·3%	18·5%	17·7%	17·3%	17·1%
Rent	5·3	4·8	5·5	4·8	4·2
Advertising	2·4	3·2	3·9	4·2	3·9
Interest	6·5	5·8	5·3	4·7	4·3
Other Expense	6·9	8·0	8·8	7·9	8·7
Total Expense	38·4%	40·3%	41·2%	38·9%	38·2%
Net Profit or Loss	2·7%	Loss 0·7%	1·1%	1·9%	3·2%
Net Gain:					
Percentage of Total Receipts	9·4%	5·7%	6·2%	5·1%	7·1%
Percentage of Net Worth	8·8%	7·4%	8·1%	8·5%	11·5%

Retail Grocery Stores: 1924.

Sales Volume	Less than $30,000	$30,000–$49,000	$50,000–$99,000	$100,000–$149,000	$150,000–$249,000	$250,000 or over
Number of Firms	55	110	205	72	59	44
Gross Margin	20·9%	19·3%	19·3%	20·6%	20·9%	19·3%
Salaries and Wages	11·8%	11·1%	10·6%	11·0%	11·0%	10·9%
Rent	2·0	1·4	1·3	1·1	1·0	1·4
Advertising	0·25	0·3	0·3	0·45	0·4	0·5
Interest	1·3	1·1	1·1	1·1	1·1	0·8
Other Expense	4·55	4·0	4·2	4·35	4·7	4·0
Total Expense	19·9%	17·9%	17·5%	18·0%	18·2%	17·6%
Net Profit	1·0%	1·4%	1·8%	2·6%	2·7%	1·7%

Retail Shoe Stores: 1923.

Sales Volume	Less than $30,000	$30,000–$49,000	$50,000–$99,000	$100,000–$249,000	$250,000 or over
Number of Firms	94	115	133	101	56
Gross Margin	27·1%	27·4%	28·5%	30·6%	34·8%
Salaries and Wages	15·7%	13·6%	13·7%	15·1%	16·6%
Rent	3·3	2·8	3·7	3·8	4·0
Advertising	1·5	2·0	2·2	2·3	3·8
Interest	3·7	2·8	2·7	2·2	1·9
Other Expense	3·6	4·3	4·4	4·1	5·7
Total Expense	27·8%	25·5%	26·7%	27·5%	32·0%
Net Profit or Loss	Loss 0·7%	1·9%	1·8%	3·1%	2·8%

[1] See Harvard University, Bureau of Business Research, Bulletins Nos. 78, 81, 80, 76, 52 and 43.

sales volume. At the same time, the total expense ratio tended to be somewhat irregularly higher for the larger firms. In any event, there is here no evidence of marked economies on the part of the concerns with relatively large sales volume. The largest stores, however, were the ones achieving the best profit-showings, by reason of their higher gross margins, the common net gain of the department stores with sales of $10,000,000 or over in 1928 being 12·1 per cent. of net worth against a corresponding figure of 5 per cent. of net worth for those with sales less than $250,000.

Among the retail shoe stores reporting for 1923 both the gross margin and the total expense ratios were distinctly higher for the larger concerns, and again it was these concerns which on the whole made the best profits. Retail jewellery stores reporting for 1927 showed relatively little variation in gross margin when grouped according to volume of sales. This tendency towards some uniformity in percentage of gross margin presumably may be attributed in part to efforts at resale price maintenance in this field and in part to customs in the trade, which apparently favour more or less uniform mark-ups. At the same time, variations in the total expense ratio for jewellery stores grouped according to sales volume were comparatively slight. Consequently it appears to be more or less accidental that the concerns with sales over $500,000 were those which had the best profits.

The grouping of retail grocery stores reporting for 1924 according to amounts of annual sales volume reflected substantially no variation in gross margin, presumably for some of the same reasons as in the case of the jewellery trade. It is perhaps significant, however, that the common figure for total expense was highest for the stores with sales less than $30,000 a year and that the next to the lowest common figure for total expense appeared for the concerns with sales over $250,000. Even so, however, the variation was comparatively small; and again it is probably accidental that the best profit-showing was made by the firms with sales between $150,000 and $249,000.

The differences both in gross margin and in total expense among the general stationers when grouped according to volume of sales for 1928 were mostly negligible. Among the lumber dealers reporting for 1928, both gross margin and total expense were highest for the concerns with sales less than $100,000 and lowest for the concerns with sales over $400,000. The differences in total expense ratios were greater than the differences in gross margins, however; consequently, the firms with the largest sales volume were those which made the best profit-showing. Here it

seems probable that some weight should be attached to the fact that lumber dealers are not retailers in the same sense as retail grocers or retail shoe merchants. Rather, their business is, to a very considerable extent, industrial in character, in that they frequently sell in the first instance to contractors or artisans rather than to final consumers. The lower total expense ratios for the larger firms in this field are possibly therefore comparable in some respects to the lower expense ratios which the Bureau frequently has found to obtain for larger concerns in the field of wholesale business. But, whatever the reasons, the retail lumber trade affords practically the only instance in the Bureau's experience where any substantially lower costs of doing business appear to be enjoyed by the larger concerns.

By and large, therefore, on the basis of the evidence shown in Table X, which is fairly typical of the Bureau's findings for other years in the same trades, there is little justification for the idea that large-scale retail firms ordinarily operate with distinctly lower costs than firms with small sales volume. Nevertheless, it is the larger rather than the smaller firms which for the most part achieve the best profits.

VI

Closely related to the comparative results of large and small retail concerns is the question of the influence exerted on operating ratios by an increase or decrease in sales volume in any one year. In Table XI are given some typical figures resulting from the grouping of large and small department stores, retail lumber dealers, general stationers and retail jewellery stores according to the percentage of increase or decrease in sales over the preceding year's sales. Again, the trends shown are substantially similar to those which the Bureau has determined for corresponding groupings in these same trades for other years. The rate of gross margin in general shows little variation in relation to increase or decrease in sales volume except in the case of retail lumber dealers, where the gross margin was noticeably lower for firms achieving an increase of 5 per cent. or more over the previous year. This result suggests that competitive conditions in the retail lumber trade were such in that year that sales increases had to be achieved primarily by price reductions. With respect to total expense, in every instance this was lower for the firms obtaining an increase in sales volume, and in all cases these were the firms which made the best profits.

These findings are distinctly in accordance with common-sense

TABLE XI

Operating Results of Retail Businesses according to Sales Increase or Decrease.[1]

(Net Sales = 100%.)

	Department Stores with Sales over $1,000,000: 1928.			*Department Stores with Sales under* $1,000,000: 1928.		
	Decrease 2·5% or over.	Increase or Decrease less than 2·5%.	Increase 2·5% or over.	Decrease 2·5% or over.	Increase or Decrease less than 2·5%.	Increase 2·5% or over.
Number of Firms	46	56	54	93	59	68
Gross Margin	32·6%	33·5%	33·4%	29·9%	29·2%	29·7%
Salaries and Wages	16·7%	16·8%	16·3%	16·7%	15·6%	15·6%
Rent	4·0	3·6	3·45	3·1	2·8	2·9
Advertising	3·45	3·2	3·0	2·5	2·3	2·5
Interest	2·25	2·05	1·95	2·9	2·6	2·4
Other Expense	6·6	6·15	6·0	5·8	5·4	5·1
Total Expense	33·0%	31·8%	30·7%	31·0%	28·7%	28·5%
Net Profit or Loss	Loss 0·4%	1·7%	2·7%	Loss 1·1%	0·5%	1·2%
Net Gain:						
Percentage of Net Sales	3·0%	4·8%	5·4%	1·9%	3·3%	3·8%
Percentage of Net Worth	6·2%	9·9%	12·8%	4·3%	8·4%	8·9%

	Lumber Dealers: 1928.			*General Stationers:* 1928.		
	Decrease	Increase or Decrease less than	Increase	Decrease	Increase or Decrease	Increase
	2·5% or over.	2·5%.	2·5% or over.	2·5% or over.	less than 2·5%.	2·5% or over.
Number of Firms	46	56	54	93	59	68
Gross Margin	32·6%	33·5%	33·4%	29·9%	29·2%	29·7%
Salaries and Wages	16·7%	16·8%	16·3%	16·7%	15·6%	15·6%
Rent	4·0	3·6	3·45	3·1	2·8	2·9
Advertising	3·45	3·2	3·0	2·5	2·3	2·5
Interest	2·25	2·05	1·95	2·9	2·6	2·4
Other Expense	6·6	6·15	6·0	5·8	5·4	5·1
Total Expense	33·0%	31·8%	30·7%	31·0%	28·7%	28·5%
Net Profit or Loss	Loss 0·4%	1·7%	2·7%	Loss 1·1%	0·5%	1·2%
Net Gain:						
Percentage of Net Sales	3·0%	4·8%	5·4%	1·9%	3·3%	3·8%
Percentage of Net Worth	6·2%	9·9%	12·8%	4·3%	8·4%	8·9%

Lumber Dealers: 1928.

	Decrease 15% or over.	Decrease 5–14·9%.	Increase or Decrease less than 5%.	Increase 5% or over.
Number of Firms	26	21	25	31
Gross Margin	27·9%	24·6%	24·7%	23·5%
Salaries and Wages	12·6%	10·0%	11·1%	9·9%
Rent	2·0	1·7	1·9	1·5
Advertising	0·7	0·6	0·7	0·5
Interest	3·6	3·7	3·0	2·8
Other Expense	8·5	8·1	6·8	7·3
Total Expense	27·4%	24·1%	23·5%	22·0%
Net Profit or Loss	0·5%	0·5%	1·2%	1·5%
Net Gain:				
Percentage of Net Sales	5·9%	4·5%	5·0%	4·6%
Percentage of Net Worth	7·2%	7·0%	9·9%	11·5%

General Stationers: 1928.

	Decrease 2·5% or over.	Increase or Decrease less than 2·5%.	Increase 2·5% or over.
Number of Firms	29	21	35
Gross Margin	34·5%	34·8%	34·7%
Salaries and Wages	19·0%	17·9%	18·2%
Rent	5·4	5·0	4·4
Advertising	1·2	1·5	1·65
Interest	2·7	2·6	2·2
Other Expense	6·9	6·2	6·55
Total Expense	35·2%	33·2%	33·0%
Net Profit or Loss	Loss 0·7%	1·6%	1·7%
Net Gain:			
Percentage of Net Sales	3·3%	4·3%	4·1%
Percentage of Net Worth	6·8%	13·2%	12·4%

Retail Jewellery Stores: 1927.

	Decrease 10% or over.	Decrease less than 10%.	Increase less than 10%.	Increase 10% or over.
Number of Firms	43	49	31	24
Gross Margin	40·5%	41·6%	39·8%	38·8%
Salaries and Wages	19·2%	16·9%	17·7%	15·5%
Rent	6·0	4·3	4·6	4·0
Advertising	3·2	4·0	3·2	2·7
Interest	5·7	4·7	5·1	4·8
Other Expense	9·4	9·8	7·9	7·9
Total Expense	43·5%	39·7%	38·5%	34·9%
Net Profit or Loss	Loss 3·0%	1·9%	1·3%	3·9%
Net Gain:				
Percentage of Total Receipts	3·5%	6·5%	6·6%	9·4%
Percentage of Net Worth	4·5%	8·8%	9·4%	11·9%

[1] See Harvard University, Bureau of Business Research, Bulletins Nos. 78, 81, 80 and 76.

expectations; but they immediately raise a question of consistency with the results of the tabulations shown in Table X. If concerns achieving sales increases over the preceding year ordinarily enjoy lower expense ratios, why do not the larger concerns in general have lower expense ratios than the smaller concerns? The answer to this question is by no means clear. A plausible surmise, however, is as follows:—In any one year a majority of the concerns obtaining an increase in sales volume do not find it necessary to expand their plant facilities or their organisations; consequently, in that year these firms enjoy lower expense ratios. If sales continue to increase, however, these firms eventually find it necessary to expand their plant facilities and organisations in order to take care of the additional volume of business. In the years when such expansion takes place the expense ratio leaps ahead. Particularly is this true if in such a year sales volume fails to live up to optimistic estimates of increase. In this way expense ratios, as firms grow larger, periodically establish themselves on slightly higher levels, with the result that in general the larger firms do not enjoy economies in comparison with the smaller establishments. In any one year, however, the number of firms which achieve sales increases without the necessity for expanding their facilities is considerably greater than those that find themselves faced with the apparent necessity of expansion; consequently, the results of the former group overshadow those of the latter group.

VII

Another index which the Bureau has found distinctly useful is that afforded by the rate of stock-turn. As previously explained, the rate of stock-turn represents the number of times annually which the average stock is sold and replaced, and is determined ordinarily by dividing the cost of merchandise sold by the average inventory at cost. In Table XII are shown some typical figures for retail firms grouped according to their rates of stock-turn. In the case of department stores, shoe stores and grocery stores the rates of gross margin exhibit little or no variation for firms grouped according to their rates of stock-turn. For general stationers, retail jewellers and retail lumber dealers gross margin was somewhat lower for the firms with the most rapid rates of stock-turn.

The relationship of stock-turn to the total expense ratio, however, is quite clear. In all instances the groups of concerns turning their stock with the greatest rapidity enjoyed the lowest

expense ratios. In the case of retail jewellers and general stationers the differences in the cost of doing business between the high stock-turn and the low stock-turn firms were quite marked; in department stores and grocery stores it was not so great. In each trade, however, the most favourable profits clearly were obtained by the firms achieving the highest stock-turn rates.

In general, these data, which are typical of those which the Bureau has in its files for other years and other trades, indicate strongly that rapidity of stock-turn is a more reliable index of operating efficiency than is volume of sales. The rate of stock-turn, it must be observed, is not entirely unrelated to the volume of sales. Where a varied assortment of merchandise with respect to size, style, colour, price and so on is necessary to permit suitable selection by consumers, the concerns with large sales volume find it possible to achieve greater rapidity of stock-turn than can be obtained by small-scale retail establishments. But this is only part of the picture. For the most part, differences in the rate of stock-turn between firms in the same line of business reflect differences in managerial capacity. A relatively rapid stock-turn rate is primarily an indication of good merchandising and careful adjustment of purchase and stocks to planned sales. The necessary abilities and mechanisms to achieve such results, of course, are more commonly found in the larger retail establishments; but the rate of stock-turn is nevertheless an excellent index of the effectiveness with which any retail business is managed.

VIII

In Table XIII are shown operating ratios for large and small department stores, retail jewellery stores, retail grocery stores, retail lumber dealers, and general stationers grouped according to the population of the cities in which they were located. It is not possible from this comparison to draw any clear-cut conclusions as to the influence exerted on operating ratios by the factor of size of city, inasmuch as the larger concerns ordinarily are situated in the larger centres of population. As shown by the data in this table, variations in gross margin, total expense and net profit for department stores, jewellery stores and grocery stores grouped according to size of city were, for the most part, comparatively small and irregular in character. In comparing these figures with those in Table X for concerns grouped according to volume of sales, no grounds are found for concluding that size of city, unrelated to volume of sales, is an important factor. In the case

TABLE XII

Operating Results of Retail Businesses according to Rate of Stock-turn.[1]

(Net Sales = 100%.)

Stock-turn	*Department Stores with Sales under $1,000,000 : 1928.* Less than 2 times	2–2·9 times	3 times or over	*Department Stores with Sales over $1,000,000 : 1928.* Less than 3 times	3–3·9 times	4 times or over
Number of Firms	65	109	76	31	60	71
Gross Margin	29·7%	30·0%	29·0%	33·3%	32·6%	33·6%
Salaries and Wages	16·6%	16·2%	15·4%	17·1%	16·3%	16·4%
Rent	3·1	3·0	2·8	3·6	3·8	3·55
Advertising	2·3	2·5	2·4	3·15	3·15	3·3
Interest	3·4	2·8	2·0	2·4	2·25	1·75
Other Expense	5·6	5·8	5·4	6·35	6·3	6·2
Total Expense	31·0%	30·3%	28·0%	32·6%	31·8%	31·2%
Net Profit or Loss	Loss 1·3%	Loss 0·3%	1·0%	0·7%	0·8%	2·4%
Net Gain :						
Percentage of Net Sales	2·1%	2·6%	3·4%	3·7%	3·9%	5·4%
Percentage of Net Worth	3·3%	6·4%	9·1%	7·9%	8·4%	11·9%

Stock-turn	*Lumber Dealers : 1928.* Less than 3 times	3 times or over	*General Stationers : 1928.* Less than 2 times	2–2·9 times	3 times or over
Number of Firms	30	35	46	45	55
Gross Margin	27·6%	25·5%	37·1%	34·2%	32·7%
Salaries and Wages	12·8%	11·2%	19·3%	18·0%	17·5%
Rent	2·3	1·7	5·5	5·2	3·2
Advertising	0·6	0·6	1·6	1·4	1·3
Interest	3·7	2·5	3·3	2·2	1·8
Other Expense	7·8	8·1	7·7	6·4	6·8
Total Expense	27·2%	24·1%	37·4%	33·2%	30·6%
Net Profit or Loss	0·4%	1·4%	Loss 0·3%	1·0%	2·1%
Net Gain :					
Percentage of Net Sales	5·4%	4·5%	3·3%	3·5%	4·2%
Percentage of Net Worth	7·7%	13·8%	6·2%	8·8%	14·1%

Percentage of Net Worth	7·7%	13·8%	6·2%	3·5%	8·8%	4·2% 14·1%

Stock-turn	*Retail Jewellery Stores :* 1927. Less than 0·8 times	0·8–1·1 times	1·2 times or over	*Retail Grocery Stores :* 1924. Less than 7 times	7–11·9 times	12 times or over
Number of Firms	83	96	51	125	219	193
Gross Margin	42·3%	40·5%	39·4%	20·3%	19·6%	19·7%
Salaries and Wages	18·4%	17·5%	17·3%	11·5%	10·6%	10·9%
Rent	5·5	5·0	4·4	1·6	1·3	1·2
Advertising	3·5	3·5	3·2	0·4	0·35	0·3
Interest	6·7	5·5	3·5	1·6	1·1	0·8
Other Expense	8·4	7·6	7·5	4·6	4·25	4·2
Total Expense	42·5%	39·1%	35·9%	19·7%	17·6%	17·4%
Net Profit or Loss	Loss 0·2%	1·4%	3·5%	0·6%	2·0%	2·3%
Net Gain :						
Percentage of Total Receipts	5·0%	6·9%	8·5%	Common figures not determined.		
Percentage of Net Worth	4·5%	9·1%	13·5%	Common figures not determined.		

Stock-turn	*Retail Shoe Stores :* 1923. Less than 1·4 times	1·4–1·7 times	1·8–2·1 times	2·2 times or over
Number of Firms	98	107	98	183
Gross Margin	28·5%	28·9%	28·8%	29·7%
Salaries and Wages	16·2%	15·2%	14·1%	13·9%
Rent	3·5	3·9	3·2	3·4
Advertising	2·1	2·2	2·1	2·3
Interest	4·3	3·1	2·4	1·8
Other Expense	4·5	4·5	4·1	4·3
Total Expense	30·6%	28·9%	25·9%	25·7%
Net Profit or Loss	Loss 2·1%	0·0%	2·9%	4·0%

[1] See Harvard University, Bureau of Business Research, Bulletins Nos. 78, 81, 80, 76, 52 and 43.

TABLE XIII

Operating Results of Retail Businesses according to Size of City.[1]

(Net Sales = 100%.)

Population	*Department Stores with Sales over $1,000,000 : 1926.* Less than 50,000	50,000–99,000	100,000–399,000	400,000 or over	*Department Stores with Sales under $1,000,000 : 1926.* Less than 25,000	25,000–49,000	50,000–99,000	100,000 or over
Number of Firms	29	39	58	37	186	53	25	20
Gross Margin	32·2%	32·1%	32·3%	33·8%	27·8%	30·9%	30·6%	31·3%
Salaries and Wages	16·1%	16·4%	15·8%	16·2%	15·0%	16·6%	16·2%	17·0%
Rent	3·1	3·1	3·2	3·5	2·4	3·1	3·6	3·6
Advertising	2·5	3·1	3·2	3·4	2·1	2·7	2·8	3·1
Interest	2·3	2·1	2·0	1·7	2·8	2·4	2·0	1·8
Other Expense	5·7	5·8	6·0	5·8	5·4	5·9	5·6	5·3
Total Expense	29·7%	30·5%	30·2%	30·6%	27·7%	30·7%	30·2%	30·8%
Net Profit	2·5%	1·6%	2·1%	3·2%	0·1%	0·2%	0·4%	0·5%

Population	*Lumber Dealers : 1927.* Less than 10,000	10,000–49,000	50,000–399,000	400,000 or over	*General Stationers : 1928.* Less than 50,000	50,000–99,000	100,000–399,000	400,000 or over
Number of Firms	37	41	36	15	61	25	33	27
Gross Margin	23·4%	24·5%	23·8%	26·6%	33·0%	33·5%	36·0%	37·2%
Salaries and Wages	9·65%	10·8%	11·35%	13·2%	17·5%	17·6%	19·1%	19·6%
Rent	1·7	1·5	2·0	2·2	4·4	4·0	5·2	4·6
Advertising	0·45	0·5	0·5	0·8	1·4	1·6	1·2	1·3
Interest	3·5	3·1	2·8	2·7	2·7	2·3	2·3	2·3
Other Expense	5·7	7·1	7·35	7·9	6·0	6·2	7·6	8·4
Total Expense	21·0%	23·0%	24·0%	26·8%	32·0%	31·7%	35·4%	36·2%
Net Profit or Loss	2·4%	1·5%	Loss 0·2%	Loss 0·2%	1·0%	1·8%	0·6%	1·0%
Net Gain :								
Percentage of Net Sales	7·2%	4·5%	2·8%	2·9%	4·0%	4·1%	3·1%	3·4%
Percentage of Net Worth	9·5%	9·6%	6·4%	6·7%	9·5%	13·2%	8·7%	9·7%

Retail Jewellery Stores : 1927.

Population	Less than 25,000	25,000–99,000	100,000–399,000	400,000 or over
Number of Firms	89	57	45	39
Gross Margin	40·7%	41·5%	40·8%	41·0%
Salaries and Wages	17·3%	18·3%	18·6%	17·5%
Rent	4·5	5·5	5·3	5·0
Advertising	2·7	3·5	3·9	4·0
Interest	6·2	5·4	5·1	4·5
Other Expense	7·5	8·6	8·3	7·7
Total Expense	38·2%	41·3%	41·2%	38·7%
Net Profit or Loss	2·5%	0·2%	Loss 0·4%	2·3%
Net Gain :				
Percentage of Total Receipts	8·6%	5·5%	3·9%	7·0%
Percentage of Net Worth	9·0%	8·0%	6·4%	9·9%

Retail Grocery Stores : 1924.

Population	Less than 25,000	25,000–49,000	50,000–99,000	100,000–399,000	400,000 or over
Number of Firms	293	79	42	81	50
Gross Margin	19·3%	20·8%	21·1%	20·0%	20·1%
Salaries and Wages	—[2]	—[2]	—[2]	—[2]	—[2]
Rent	1·3%	1·3%	1·6%	1·2%	1·7%
Advertising	—[2]	—[2]	—[2]	—[2]	—[2]
Interest	—[2]	—[2]	—[2]	—[2]	—[2]
Other Expense	16·3%	17·4	16·9	17·1	16·8
Total Expense	17·6%	18·7%	18·5%	18·3%	18·5%
Net Profit	1·7%	2·1%	2·6%	1·7%	1·6%

[1] See Harvard University, Bureau of Business Research, Bulletins Nos. 63, 75, 80, 76 and 52.
[2] Common figure not determined.

of retail lumber dealers and general stationers, however, there is some basis for believing that size of city may be a matter of some consequence. In both these trades the ratios for gross margin as well as for total expense were higher for the concerns in the larger centres of population, and this tendency is for the most part contrary to the apparent effect of relative sales volume indicated in Table X. Here cognisance should be taken of the fact that the retail lumber trade and the stationery trade (at least in the larger cities) both tend to be industrial in character; that is, their dealing is largely with other business firms rather than with private individuals. Both of them employ "outside" salesmen to solicit patronage. Exactly why businesses of this type should incur higher operating expense ratios in larger cities and consequently require higher gross margins is not clear. It is possibly significant that substantially the same situation was found to obtain for wholesale grocery firms in 1923 classified according to size of city, as shown in Table XIV. Definite conclusions, however, with respect to the significance of the population factor must await further study.

TABLE XIV

Operating Results of Wholesale Grocery Firms in 1923 *according to Size of City.*[1]

(Net Sales = 100%.)

Population.	Less than 50,000.	50,000–99,000.	100,000–399,000.	400,000 or over.
Number of Firms . . .	323	71	67	38
Gross Margin	11·1%	11·5%	11·3%	13·3%
Total Salaries and Wages .	5·5%	6·0%	6·0%	7·3%
Rent	0·5	0·6	0·6	0·6
Advertising				
Interest	1·5	1·5	1·4	1·2
Other Expense . . .	2·7	2·9	3·0	3·7
Total Expense . .	10·2%	11·0%	11·0%	12·8%
Net Profit . . .	0·9%	0·5%	0·3%	0·5%

[1] Harvard University, Bureau of Business Research, Bulletin No. 40.

IX

Tables X to XIII, inclusive, have presented figures for retail concerns grouped according to the several sets of internal and external conditions, such as relative sales volume, sales increase

or decrease, rate of stock-turn and size of city, which might be expected possibly to influence their operating ratios. In Table XV a different approach is taken, and figures are presented for firms grouped according to their final profit and loss showing, in the sense of return over and above interest on investment. In this table large and small department stores, retail jewellery stores, retail lumber dealers and general stationers are ranged in groups from those showing the largest losses to those obtaining the highest profits. The results of this comparison are striking. In each of these trades the firms enjoying the most favourable profits are those with the lowest ratios for total operating expense. It is true that for the department stores with sales over $1,000,000 and for the retail jewellery stores, part of the more favourable results for the firms enjoying the best profits is attributable to higher gross margins; but even in these cases a considerably larger part of their profit-showing is attributable to this lower cost of doing business. For retail jewellery stores in 1927, for instance, total expense varied from 49 per cent. of net sales for firms with losses of 5 per cent. or over to 32·8 per cent. of net sales for firms with profits of 5 per cent. or more, whereas gross margin for these two groups varied only from 38·5 per cent. to 43·9 per cent.

These results are corroborated by similar comparisons which the Bureau has made for these trades and others in several different years; and the fact that the retail concerns making the best profits are uniformly those with the lowest operating expenses is by all odds the best attested and most significant finding which has come out of the Bureau's studies of retail business.

X

Finally, brief conclusions on some of the principal matters discussed in this paper may be offered as follows:

(1) In retail trade in the United States the average or typical profits, beyond compensation for managerial services and interest on investment, are comparatively small. From the experience of the Harvard Bureau of Business Research, however, it does not appear likely that, by and large, net profit in the narrow sense is non-existent in retail trade. This conclusion is reached after making some allowance for the fact that the firms reporting to the Bureau may be managed rather more effectively than the average run of concerns.

(2) Since the condition of relatively small net profits

TABLE XV

Operating Results of Retail Businesses according to Profit or Loss.[1]

(Net Sales = 100%.)

	Department Stores with Sales over $1,000,000 : 1928.				*Department Stores with Sales under* $1,000,000 : 1928.			
	Loss.	Profit.			Loss.		Profit.	
		Under 2%.	2–3·9%.	4% or over.	2·5% or over.	Under 2·5%.	Under 2·5%.	2·5% or over.
Number of Firms	48	44	35	35	58	71	70	52
Gross Margin	32·0%	33·0%	34·1%	34·1%	29·2%	29·5%	29·9%	30·0%
Salaries and Wages	17·3%	16·4%	16·4%	15·8%	17·7%	16·5%	15·9%	13·8%
Rent	4·2	3·5	3·8	3·0	3·5	3·0	2·7	2·6
Advertising	3·9	3·15	3·0	2·6	2·9	2·5	2·2	2·0
Interest	2·3	2·2	1·9	1·8	3·3	2·7	2·6	2·4
Other Expense	6·5	6·55	6·0	5·8	6·6	5·9	5·3	4·6
Total Expense	34·2%	31·8%	31·1%	29·0%	34·0%	30·6%	28·7%	25·4%
Net Profit or Loss	Loss 2·2%	1·2%	3·0%	5·1%	Loss 4·8%	Loss 1·1%	1·2%	4·6%
Net Gain or Loss :								
Percentage of Net Sales	1·5%	3·9%	5·9%	7·8%	Loss 1·1%	1·6%	3·7%	7·3%
Percentage of Net Worth	2·9%	8·6%	13·6%	16·9%	Loss 2·4%	3·6%	9·4%	16·2%

	Lumber Dealers : 1928.				*General Stationers :* 1928.			
	Loss.	Profit.			Loss.		Profit.	
		Under 2%.	2–3·9%.	4% or over.	2·5% or over.	Under 2·5%.	Under 2·5%.	2·5% or over.
Number of Firms	48	44	35	35	58	71	70	52
Gross Margin	32·0%	33·0%	34·1%	34·1%	29·2%	29·5%	29·9%	30·0%
Salaries and Wages	17·3%	16·4%	16·4%	15·8%	17·7%	16·5%	15·9%	13·8%
Rent	4·2	3·5	3·8	3·0	3·5	3·0	2·7	2·6
Advertising	3·9	3·15	3·0	2·6	2·9	2·5	2·2	2·0
Interest	2·3	2·2	1·9	1·8	3·3	2·7	2·6	2·4
Other Expense	6·5	6·55	6·0	5·8	6·6	5·9	5·3	4·6
Total Expense	34·2%	31·8%	31·1%	29·0%	34·0%	30·6%	28·7%	25·4%
Net Profit or Loss	Loss 2·2%	1·2%	3·0%	5·1%	Loss 4·8%	Loss 1·1%	1·2%	4·6%
Net Gain or Loss :								
Percentage of Net Sales	1·5%	3·9%	5·9%	7·8%	Loss 1·1%	1·6%	3·7%	7·3%
Percentage of Net Worth	2·9%	8·6%	13·6%	16·9%	Loss 2·4%	3·6%	9·4%	16·2%

	Lumber Dealers : 1928.				*General Stationers :* 1928.			
	Loss.		Profit.		Loss.		Profit.	
	2·5% or over.	Under 2·5%.	Under 2·5%.	2·5% or over.	2·5% or over.	Under 2·5%.	Under 2·5%.	2·5% or over.
Number of Firms	28	28	36	46	25	25	43	53
Gross Margin	23·6%	26·2%	25·8%	26·9%	33·4%	35·6%	34·6%	34·7%
Salaries and Wages	14·4%	12·2%	11·6%	9·3%	20·8%	20·1%	18·0%	16·3%
Rent	2·4	2·1	1·7	1·5	5·5	5·2	4·5	4·1
Advertising	0·6	0·7	0·7	0·6	0·85	1·55	1·75	1·3
Interest	4·2	3·4	3·2	2·7	3·0	2·9	2·3	2·3
Other Expense	7·9	9·0	7·3	7·3	7·85	6·95	7·05	6·0
Total Expense	29·5%	27·4%	24·5%	21·4%	38·0%	36·7%	33·6%	30·0%
Net Profit or Loss	Loss 5·9%	Loss 1·2%	1·3%	5·5%	Loss 4·6%	Loss 1·1%	1·0%	4·7%
Net Gain or Loss :								
Percentage of Net Sales	Loss 0·5%	2·5%	5·0%	8·5%	Loss 1·5%	2·0%	3·5%	7·2%
Percentage of Net Worth	0·0%	4·8%	9·4%	15·5%	Loss 5·4%	4·4%	9·5%	20·5%

	Retail Jewellery Stores : 1927.			
	Loss.		Profit.	
	5·0% or over.	Under 5·0%.	Under 5·0%.	5·0% or over.
Number of Firms	44	56	63	67
Gross Margin	38·5%	39·1%	40·9%	43·9%
Salaries and Wages	22·6%	19·4%	17·1%	14·0%
Rent	6·4	5·3	4·4	4·4
Advertising	4·2	3·2	3·9	2·7
Interest	6·9	5·3	5·0	4·8
Other Expense	8·9	8·5	8·0	6·9
Total Expense	49·0%	41·7%	38·4%	32·8%
Net Profit or Loss	Loss 10·5%	Loss 2·6%	2·5%	11·1%

[1] See Harvard University, Bureau of Business Research, Bulletins Nos. 78, 81, 80 and 76.

apparently obtains also in wholesale trade, it follows that the spread between the prices received by manufacturers and producers and those paid by consumers consists very largely of costs of doing business rather than of profits. There is some evidence that this spread is increasing because of rising costs of doing business, but whether merely as a result of waste, neglect and inefficiency, or whether in response to definitive tendencies inherent in our modern industrial development, is not clear.

(3) For the most part, retail concerns with large sales volume do not enjoy lower operating costs than those with small sales volume. In general, however, larger firms obtain better profits.

(4) Retail enterprises with relatively rapid rates of stock-turn almost invariably have lower operating expenses and obtain more favourable profits than those with slower rates of stock-turn. Rate of stock-turn in itself, however, is probably not the primary cause of these variations, but rather should be regarded as one of the principal indices of the general efficiency with which the business is conducted.

(5) A low expense ratio contributes more to the profit of retail business than does a high rate of gross margin. The cost of doing business lies more largely within the control of the individual management than does the rate of gross margin, inasmuch as the individual business both buys and sells in competitive markets. It may be stated, therefore, that profits are more closely related to the controllable factors in a retail business than to the uncontrollable factors. Whether or not there is any basic level of pure profit in retail business which society must pay in order to obtain entrepreneurial and managerial services, and which therefore plays a part in the determination of prices, it seems clear that significant variations in profit or loss are governed principally by differences in the quality of management rather than by fortuitous circumstances.

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INHERITANCE

A Sample Inquiry[1]

The procedure at first adopted by the Special Committee on Inheritance to obtain a genuine statistical "sample" of fortunes and their history was the preparation of a standard form of details to be completed by executors, and by others with first-hand knowledge of estates, under conditions, if so desired, of individual confidentiality. The members of the Committee undertook to circulate these amongst their acquaintances, and to endeavour by their combined efforts to obtain a sufficient number to allow reasonable conclusions to be drawn from the aggregation. An appeal was also made through the Press to those interested in helping a scientific inquiry, to apply for one of these forms from the Secretary. The general result of this effort was disappointing as to the total number obtained, but it served to bring out the difficulties, even where there was complete willingness to assist in the inquiry, and a real interest in the method, and indeed in the subject. These may be briefly summarised :—

[1] This article is the substance of a report by a special committee to Sec. F of the British Association at Bristol, September 1930, drafted by the Chairman. The Committee was first appointed in September 1926, to carry out further investigation of certain questions arising out of the Presidential Address given by Sir Josiah Stamp to the Oxford Meeting of the Section upon "Inheritance as an Economic Factor" (Economic Journal, January 1927). The terms of reference covered the subject of Inheritance as an influence upon the distribution of wealth.

The Committee consisted of the following members: Sir Josiah Stamp, G.B.E. (Chairman), Mr. Josiah Wedgwood, who acted as scrutinising secretary up to the Glasgow meeting (1928), Mr. R. B. Forrester, Secretary, Miss L. Grier, Professors Cannan, Macgregor, Clay, Hallsworth and Smith, Dr. W. H. Coates and Sir Alfred Yarrow.

In addition to the inquiry work carried out by the Committee, the results of which are surveyed in this article, Mr. Josiah Wedgwood, the scrutinising secretary, made two special contributions to the subject of investigation under the auspices of the Committee; the first was his paper to the Section at Leeds (1927), in which he described a first sample investigation of the fortunes of parents and children; it comprised 99 English estates in excess of £200,000, left during the year 1924–25. As a consequence of discussion at Leeds, Mr. Wedgwood decided to take a second sample of fortunes between £10,000 and £200,000, and the Committee made a grant towards the fees payable by him to the Probate Registry. This second sample consisted of 124 estates passing in a few weeks of 1926. This is now published with acknowledgment to the British Association, together with the first sample in Chapter VI of Mr. Wedgwood's book upon the Economics of Inheritance (published London 1929).

(*a*) The inability of executors to record, from their own knowledge, what wealth has been given away by the deceased, especially in the years not immediately prior to decease.

(*b*) The inability of executors and beneficiaries to state the actual accessions that have been made to the fortunes of the deceased during the earlier lifetime, or to state positively that there have been none.

The Committee then decided to make a direct appeal to a number of executors by sending them a slightly revised form and a suitable covering letter. The method adopted was regular selection (every third estate over £5,000 was chosen, counting 1, 2, 3, 1, 2, 3, etc.) from the daily lists of Probates in *The Times*, which statistically are compiled at random, between the date September 1st, 1928, and December 31st, 1929. Over 3,000 forms were issued, and again the numbers actually completed were small.

"A" MALES.

Class of Estates.	No.	Total Value at Death. £.	Alienated during Life.		Total Fortune including Sums Alienated. £.	Percentage of Inheritance to Fortune.	Sums (included in the foregoing) Inherited or received by Gift.	
			No.	Amount.			No.	Amount.
				£.				£.
Over £50,000	6	935,600	5	441,000	1,376,600	6·5	3	90,000
£25,000 to £50,000 .	10	323,200	2	55,900	379,100	13·3	5	50,300
£5,000 to £25,000 .	17	225,500	2	9,500	235,000	30·9	13	72,500
Total "A"	33	1,484,300	9	506,400	1,990,700	10·7	21	212,800
"B" MALES.								
Over £50,000	3	475,186	2	118,000	593,186	3·4	1	20,000
£25,000 to £50,000 .	4	135,239	1	10,000	145,239	8·3	2	12,000
£5,000 to £25,000 .	16	182,920	7	11,400	194,320	28·2	9	54,850
Total "B"	23	793,345	10	139,400	932,745	9·3	12	86,850
THE SAMPLE (TOTAL "A" AND "B").								
Over £50,000	9	1,410,786	7	559,000	1,969,786	5·6	4	110,000
£25,000 to £50,000 .	14	458,439	3	65,900	524,339	11·8	7	62,300
£5,000 to £25,000 .	33	408,420	9	20,900	429,320	29·7	22	127,350
Total .	56	2,277,645	19	645,800	2,923,445	10·2	33	299,650

Despite the fact that the aggregation of cases is not large enough to form the basis of universal and firm generalisations, it does throw up some interesting results, which are well worth recording, provided that the limitations and risks of the statistics of small numbers are borne in mind. The sample as collected by the members of the Committee is shown on page 634, described as " A," that obtained by systematic general issue of forms is called " B," and the two together are given as " The Sample."

The following general statements may be made about these results :—

(1) The two samples, derived in different ways, lend considerable support to each other in their broad tendencies, and indicate that the combination may not differ widely from a general condition. The graduation of estates by total amounts, and by numbers, in the sample, compares with the graduation for the whole of the United Kingdom as follows :—

	Sample.		Aggregate for United Kingdom.	
	Percentage of Amounts.	Percentage of Numbers.	Percentage of Amounts.	Percentage of Numbers.
Over £50,000 . . .	61·9	16·0	53·0	11·1
£25,000 to £50,000 . .	20·1	25·0	15·4	12·7
£5,000 to £25,000 . . .	18·0	59·0	31·6	76·2
	100·0	100·0	100·0	100·0

It will be seen that the sample draws rather more heavily upon the higher estates in proportion to the lower than their actual total distribution in the country. This difference in weighting must be borne in mind before any attempt is made to generalise from the results.

(2) There is a definite progression in the proportion of inheritance to total fortune, as the fortune increases; the larger fortunes have been made to the greatest extent within the lifetime of the individuals and owe least to bequest.

(3) For fortunes, in general, left in recent times about 10 per cent. has been inherited in this sample. But if each grade is accepted as generally true then the total for all estates, owing to the different weighting referred to above (under 1), would be raised to over 14 per cent.

(4) For fortunes in general, the sums given away during life were rather over twice the sums received during life. This would be consistent with a fairly uniform percentage over a long

period of years in the custom of giving, if the total wealth were doubled with each generation, assuming no marked change in the level of values.

(5) For fortunes from £25,000 to £50,000 the sums received and the sums given were about in equilibrium (although examination of the particular instances shows that this is hardly ever the case individually). In the larger estates the sums given away were five times the sums received.

(6) The practice of giving during lifetime is much more marked in the large estates, where some 28 per cent. was "alienated," against under 5 per cent. in the smaller estates. In numbers, nearly all the large ones gave money away, but in the small ones only about 27 per cent.

(7) As regards the period affected:—In "B" the date of death in all the cases, except one, fall within the period 1924–9 and are therefore of a similar "time class." But in "A" 19 cases were deaths prior to 1924 with estates amounting to £759,426, £208,400 being alienated in five cases, making the total fortunes £967,826, in which £175,800 was inherited in 13 cases, including one large case accounting for 40 per cent. of the whole. It would be dangerous to infer from this that there is any general tendency for the proportion of inheritance in large fortunes to diminish in more recent years.

(8) An age distribution of the cases shows the following results for "The Sample":—

Age.	No.	Estate.	No.	Alienated.	Total Fortune.	Inherited.	No.
Age unspecified .	4	416,000	1	10,000	426,000	81,060	2
Up to 55 inc. .	6	82,039	1	3,000	85,039	29,500	4
56 to 70 inc. .	20	472,575	5	85,500	558,075	87,450	13
Over 70 . .	26	1,307,031	12	547,300	1,854,331	101,640	14
Total . .	56	2,277,645	19	645,800	2,923,445	299,650	33

This shows a negligible percentage of gifts *inter vivos* for the youngest group, 18 per cent. for the next and nearly 42 per cent. in the oldest group (reckoned upon the amount of the estate), which accords with prima facie expectation on the recognised tendencies. (The fact that the average size of estates increases with the ascending age groups is, of course, well known, and the greater length of time during which money can be actively made, and during which the factor of accumulation can passively operate, are two obvious reasons. It is not improbable too that vigour

of life leading to the higher ages of death is also associated with individuality in wealth-creation.)

As regards inheritance by age groups, the percentage of total fortune in the youngest is 34, in the next 15·6 and in the oldest only 5·5, which again indicates that in the sample the largest fortunes accruing to the greater ages owe less to inheritance from outside than to acquirement and accumulation during life.

The number of women's estates collected by both methods was 13.

The Estates totalled . .	£315,366
The sums given away to .	20,000 (in four cases)
Total fortunes . . .	335,366
The sums inherited or received by gift to . .	173,100 in 12 cases.

As might be anticipated, these results differ completely from the male estates; the proportion of the fortune alienated is negligible but the origin of the fortune in inheritance instead of being only ten per cent. is well over one half. The numbers of cases are too small, however, for any satisfactory results by sub-division, and none is attempted.

J. C. STAMP

THE AUSTRALIAN PROBLEM

I

MUCH attention has been given both in Australia and abroad to the extremely difficult situation into which Australia has been plunged in the past six months. Many overseas critics believe that the s'tuation is due entirely to the unsound economic policy pursued by Australian governments in the past ten years. And there are critics of the same mind at home. They would reject the idea that external conditions have exerted a dominant influence in causing the present difficulties. Australia has pursued a false policy, and a major economic crisis is the inevitable result. This is both too simple and too harsh a view of the situation. It gives undue emphasis to the effect of public policy upon economic prosperity, an error to which many critics fall an easy prey. They have all the superficial evidences of truth on their side in the Australian example. Extravagant borrowing, extreme protection, a closely regulated standard of living and chaos in public finance provide ample ground for the belief that Nemesis is upon a nation that has worshipped false gods. Was there not a growing volume of criticism before the crisis? Economists through the *Economic Record* [1] and other publications had issued warnings that it was possible to pursue a national ideal of a high standard of living too far. The British Economic Mission in 1929 reported that Australia had mortgaged its future too heavily. Even the Development and Migration Commission established in 1926 to stimulate development, and to supervise the expenditure of loans under the "£34,000,000 Agreement" with the British Government, had expressed some doubts upon the rate at which development could be achieved. Finally, the Tariff Board, at first highly protectionist in its sympathy, was becoming restive about the high costs in protected industries.[2] Surely there is evidence enough in

[1] *The Journal of the Economic Society of Australia and New Zealand.* See also: Sutcliffe, *The National Dividend* (Melbourne University Press); Benham, *The Prosperity of Australia* (King); Wood and Phillips, *The Peopling of Australia* (M.U.P.); Mills, Portus and Campbell, *Studies in Australian Affairs* (M.U.P.); Anderson, *Fixation of Wages* (M.U.P.); *The Australian Tariff: an Economic Inquiry* (M.U.P.); Mauldon, *The Economics of Australian Coal* (M.U.P.).

[2] See Report of the British Economic Mission to Australia, 1929; Second Annual Report of the Development and Migration Commission, 1929; Annual Report of the Tariff Board, 1929 (all from the Government Printer, Canberra).

these criticisms to justify the assertion that Australia's difficulties were of her own making. But the responsible critics quoted would not agree. They freely admit that our ambitious developmental policy has been in part ill-conceived. But even the most unfavourable view of the mistakes could not account for the present crisis, and it is important to make a comprehensive survey of the situation.

II

Up to the middle of 1929 Australia was favoured by a combination of circumstances that enabled the traditional policy of rapid development to be pursued with all the outward signs of success. First, wool prices were high and the clip increased steadily in volume. Wheat prices were equally satisfactory and there was a considerable expansion of production. The less important exports were on the whole favoured by satisfactory overseas prices and total exports were sustained at approximately £145 m. per annum from 1926–27 to 1928–29, compared with £120 m. for the years 1921–22 to 1923–24. Statistics for wool and wheat may be given in detail.

	Annual Average. (Figures in millions.) 1921–22 to 1923–24.	1926–27 to 1927–28.	Percentage increase.
Wool.			
No. of sheep . .	84·3	103·4	23
Wool produced (lb.)	703	927	30
Value of clip . .	£53·7	£71·9	32
Wheat.			
Acreage . .	9·6	12·9	34
Total yield (bushels)	121	146	20
Value of crop . .	£31·2	£37·5	20

The principal primary industries had thus experienced an increase in output equivalent to the increase in value.

Secondly, the terms of international trade were in favour of Australia. The Commonwealth Statistician constructs an index-

It is well to record that under the Migration agreement, Great Britain was to lend Australia £34,000,000 at low rates of interest over ten years, and 450,000 immigrants were to be absorbed. The capital required per immigrant was thus estimated at £75 in defiance of all experience: £300 per head would be a low estimate. The Development and Migration Commission through its careful investigation of costs and benefits exposed the obstacles to profitable development, and after two years of work it had been only able to recommend schemes, involving the expenditure of £5 m. Had there been the same careful scrutiny of ordinary loan expenditure the growth of the public debt would have been retarded.

number of export prices and the Government Statistician of New South Wales an index-number of import prices for that State.[1] The movements in these index-numbers for some recent years were as follows :—

	Export Prices. 1911 = 100	Import Prices. 1911 = 100	Terms of Trade. 1911 = 100
1920 . . .	194	280	69
1921 . . .	171	214	79
1922 . . .	162	195	83
1923 . . .	194	199	97
1924 . . .	228	197	116
1925 . . .	214	184	116
1926 . . .	183	174	105
1927 . . .	186	174	107

(Export prices for 1928 are not yet available.)

The ratio of international exchange was thus moving in favour of Australia up to 1925, and it was still favourable in 1927.

Thirdly, Australia was able to raise substantial loans overseas. At June 30th, 1923, the external debt was £419·6 m., and it had risen to £570 m. by June 30th, 1928, an increase of £30 m. per annum. This influx of capital was a powerful influence in sustaining prosperity, but in view of the facts recorded above concerning the export trades and the ratio of international exchange, it would be an error to attribute the high level of prosperity up to 1928 wholly to overseas borrowing. The rate of borrowing was, however, excessive, and there were indications both in Australia and in London that some reduction must take place. The interest burden on the external debt in this period rose from £19·1 m. to £27·6 m., an increase of 44 per cent. compared with an increase of 36 per cent. in the debt, a clear indication that borrowing was becoming more costly. The ratio of interest payments to exports and recorded production (estimated to be about two-thirds of national income) was as follows :—

	Percentage External Interest to— (*a*) Exports	and (*b*) Production.
1921	12·4	4·2
1923	16·2	5·0
1928	19·5	6·0
1929	19·2	6·1

The situation disclosed by these percentages was becoming precarious even with the satisfactory condition of export production. While overseas borrowing continued the transfer problem

[1] The utility of this index-number as a measure of import prices is discussed in Benham, *The Prosperity of Australia*, pp. 251–55.

was not difficult, a condition familiar to all debtor countries since the war. For interest on the public debt Australia now has a transfer problem amounting to nearly £4 10*s*. per head, much higher than Germany, and any other country except New Zealand. It was the magnitude of this transfer problem that caused concern to competent observers of the economic condition of Australia even in the days of prosperity.

III

But it was not the only danger spot in the position. Four others must be mentioned. First, the development of industry was depending more and more upon the tariff and other forms of assistance. Taking the average of the years 1911–12 to 1913–14 and 1924–25 to 1926–27, employment of males in all rural industries increased by 4 per cent. compared with 38 per cent. for manufacturing industry. Manufacturing production increased from 26 per cent. of total production in 1913 to 35 per cent. in 1927–28 and 36 per cent. in 1928–29. This was a natural development in a country that had first pursued primary production and later turned to secondary industries. But the development was somewhat forced. Only two primary industries had shown a substantial increase in males employed in the period above mentioned. These were dairying and sugar, both favoured by the tariff. In manufacturing the greatest increases had occurred in protected industry, and the increase was roughly proportional to the degree of assistance given. Obviously, development of this kind is costly and throws a heavy burden upon export industries. The Tariff Committee, appointed by the Prime Minister, reported in 1929 that the cost to the export industries was about 8 per cent. in 1926–27, and it viewed any increase with concern.[1]

Secondly, the Australian price level had remained at approximately the level it reached after the post-war deflation. U.S.A. prices were lower relatively to the 1913 position, and

[1] See *The Australian Tariff: an Economic Enquiry*, Part VI. On p. 87 the Committee stated: "Our surplus resources available to subsidise industry are limited and will not stand any greater strain than imposed by the present tariff." In spite of efforts to develop secondary industries and to stimulate immigration by loan expenditure, the rate of growth of population was falling after 1920. The natural increase declined from 1·5 per cent. in 1920 to 1·2 per cent. in 1928. Immigration was high from 1922 to 1927, and for the eight years ending June 30th, 1929, accounted for 0·55 per cent. per annum increase in population. This is equivalent to the rate of increase from this source before the war, but immigration declined after 1928 and is at present negligible. Present trend of population indicates that the rate of economic progress in Australia will be less in the immediate future than it was either before or after the war.

British prices fell continuously from 1924. In 1928, British prices as measured by the Board of Trade index-number were about 33 per cent. above pre-war levels, while Australian were 65 per cent. up. Whilst these figures cannot be taken as an accurate measure of the disparity in price movements in Australia and overseas, there is no doubt that the Australian price level was sustained at a high figure, while overseas prices were either falling or stable at a lower level. Two main causes account for this disparity. First, the overseas borrowing increased spending power and the volume of bank credits, and, secondly, the high prices for Australian exports were reflected in high internal prices. The tariff was, of course, a contributing factor in keeping up the prices of manufactured and sheltered goods, but in the absence of the other two main causes the tariff could not have sustained high prices without forcing a contraction of export production.

Thirdly, the general level of wages was rising. In 1922 there was added to the basic wage what came to be known as the Powers' 3*s*. This was intended to compensate for the losses incurred by wage-earners on account of the rise in the cost of living and the lag in the adjustment of wages, but it was continued after the reason for it had disappeared. Owing to the increase in the number of workers brought within the ambit of arbitration and wage-fixing tribunals, including many engaged in State instrumentalities, the basic wage was applied to a larger number of workers. Finally, the adjustments in the basic wage have been made on the basis of an index-number of retail prices of food and house rents, estimated to cover about 60 per cent. of household expenditure. This index-number has not fallen to the same extent as a more complete index-number, including clothing and other household expenditure. Had the basic wage been adjusted according to movements in the more complete index-number, "the harvester equivalent" (the standard fixed by Mr. Justice Higgins in 1907) could have been observed with a basic wage 6 per cent. less than has been fixed. The steady upward trend of unemployment must be regarded as an indication of the development of a wage rate somewhat beyond the capacity of industry. The average unemployment for the years 1922–29 was 10 per cent., with a rising tendency. If unemployment is ignored, real wages were 8 per cent. higher in 1929 than in 1911, but when allowance is made for the incidence of unemployment the real wage was barely 1 per cent. higher.[1]

[1] *Labour Report*, No. 20, 1929 (Commonwealth Bureau of Census and Statistics), p. 81.

Fourthly, the condition of public finance was becoming unsatisfactory. Commonwealth revenue had been buoyant during the period of high imports, and the Commonwealth Government increased expenditure on schemes of development such as Federal Aid to Roads involving £2 m. per annum. With the decline in imports and the increasing burden of interest payments, deficits in the Commonwealth accounts commenced to make their appearance, and at June 30th, 1930, a deficit of £6·5 m. had been accumulated. The position in the States was much more difficult on account of the heavy loan expenditure on public undertakings. Sir Lennon Raws, in the *Economic Record* for November 1928, made a comprehensive statement of Australian loan expenditure. He found that for the financial year 1926–27 the total capital expenditure on public undertakings, including railways, had amounted to a little over £400 m. The financial returns for the year showed a deficit of 1½ per cent. on this capital. It was the increasing burden of interest payments that compromised the State budgets. This may be indicated from the following table (figures in millions):

Year.	Interest on State Debts.	Interest on Commonwealth Debt.	State Taxation.	Commonwealth Taxation.	Value of recorded Production.
	£	£	£	£	£
1923 .	25·5	17·3	19·0	49·9	379·4
1925 .	29·2	17·6	22·9	52·8	454·1
1928 .	35·6	19·5	31·2	56·6	453·3
1929 .	35·9	19·6	32·4	56·3	447·8

It is clear from this table that the percentage of interest payments to taxation and production had been steadily rising during the period. The increase in interest was due in part to an increase in the total public debt from £905 m. in 1923 to £1104 m. in 1929, and in part to the increase in the rate of interest payable on the debt. The average rate on the State debts rose from £4 13*s*. 2*d*. per cent. in 1923 to £4 18*s*. 11*d*. per cent. in 1929, and for the Commonwealth debt from £4 19*s*. 3*d*. per cent. in 1923 to £5 5*s*. per cent. in 1929.

IV

These weaknesses in the general economic situation and in public finance would have required some adjustment of Australian economic conditions even had the basis of prosperity not been adversely affected, by changes in overseas prices, and the attitude

of the investor to Australian securities. That this process of adjustment would have brought upon Australia a major economic crisis is not a tenable thesis. A minor alteration in the basic wage, a progressive reduction of overseas borrowing over a series of years, and an increase in taxation to balance budgets would have met the situation. Under Australian political conditions even relatively minor adjustments of this nature might have caused difficulties. The results of the 1929 Commonwealth elections fought on the arbitration issue indicated that the general public had not realised the weaknesses in Australian economic policy. To this extent it is fair to attribute the difficulties of Australia to internal policy, and to a refusal to accept readily a reversal of this policy. But the movements in price levels which commenced in the middle of 1929 completely altered the situation. The average price realised for Australian wool for the period 1923 to 1929 was 19*d.* per lb. This includes the two high years, 1923–24 and 1924–25, and if the remaining four years of the period are taken, the average price works out at 17*d.* per lb. For the season 1929–30, prices averaged 10*d.* This is a decline of nearly 50 per cent. on the price for the whole period, and of over 40 per cent. on the average price for the four years 1925–26 to 1928–29. At the ruling prices of to-day the drop would be approximately 50 per cent. on the average price for the four-year period. For wheat the average price for the period 1923–29 was 5*s.* 7*d.*, and this included two years of high prices, 1924–25 and 1925–26. Excluding these the average would be 5*s.* 2*d.* For the season 1929–30 the export price was again 4*s.* 10*d.*, but the harvest was poor and exports amounted to £10 m. compared with £18 m. on the average for the previous four years. If the export price is 3*s.* per bushel for the current season, the fall on the average of the previous six years will be nearly 50 per cent. With the reduction in the prices of other exports the loss of income to Australia on account of export production will be not less than £40 m. Last year the total exports of merchandise amounted to £97 m., to which should be added the normal export of gold of about £2 m. This was a reduction of £43 m. on the exports of the previous year, and of £52 m. on the average of the previous four years. A loss of income on exports of £40 m. is, therefore, a moderate estimate. Borrowing overseas has been about £30 m. per annum, and if this is continued the total loss of income from overseas will amount to £70 m., more than 10 per cent. of the national income in the years of prosperity. On present prospects of price movements for export production, and with a moderate

programme of overseas borrowing, Australia must look forward during, say, the next five years to a reduction of her national income of 10 per cent. This loss has reduced spending power in the export industries, and in those industries dependent upon the expenditure of loan money. There have consequently been indirect losses which have greatly increased the total loss of income in the present depressed condition of industry. Pending a readjustment of internal economic conditions to the new situation, the total loss of income is, therefore, much greater than the first loss due to a decline in income from overseas. Indications of this condition of affairs are to be found in the heavy increase in unemployment, the official percentage of trade unions unemployed having risen steadily from 12 per cent. in the second quarter of 1929 to 18·5 per cent. in the second quarter of 1930, and it is still rising. The profits of industry already show a serious decline, but as the public balance sheets include the relatively good trading period from July to December of 1929, they do not portray the full effects of the depression. A group of 35 balance sheets, however, record a 20 per cent. reduction in profits for the year 1929–30 compared with the year 1928–29. Movements in share prices anticipate the decline in profits, and the index-number of the Melbourne Stock Exchange for ordinary shares at the end of August was over 40 per cent. below the average for the years 1926 to 1929. There has been a substantial decline in share values since the end of August.

Other indications of the severity of the position may be mentioned. (i) The average yield of Commonwealth bonds increased from about £5 5*s*. per cent. in the middle of 1929 to £6 5*s*. per cent. in September last. (ii) Bank advances have greatly increased, and in the June quarter of this year were £36 m., or 14·8 per cent. higher than in the June quarter of 1928. Meanwhile deposits declined by £7 m., or 2·6 per cent., and cash reserves fell by £14 m., or 27·7 per cent. The result was an increase in the ratio of advances to deposits from 88 per cent. in June 1928 to 105 per cent. in June last. In the same period, cash reserves fell from 18·5 per cent. to 14 per cent. (iii) Rates of exchange were kept a little above par until the beginning of the present year, when they were raised by steps to 6½ per cent., an abnormal situation for Australia, where exchange business is undertaken by the banks and rates are changed only at long intervals and in modest amounts. (iv) To relieve the overseas situation, legislation was passed enabling the Commonwealth Bank to acquire the gold reserves held by the private banks,

amounting to nearly £26 m. at the beginning of 1929. The exports of gold for the year 1928–29 were £27·7 m., and this has almost exhausted the supplies of surplus gold available for export.[1] Even with this export of gold the balance of payments could not be adjusted without special short-term borrowing in London and Australia. Imports and debt services amounted to £157 m. for the year 1929—30, and exports of goods and gold to £125 m. The deficiency of £32 m. was met by the issue of Treasury bills in London to the amount of £10 m., by long-term borrowing in the cities of Sydney and Brisbane amounting to £5 m., by increasing the overdraft of the Government to the Commonwealth Bank in London to £18 m., and by the retention in Australia of funds that would normally be transferred, but were temporarily invested in Australian securities, pending a return to parity of exchange. Estimates of this amount varying from £10 m. to £20 m. are made.[2] (v) Finally, the cash position of the Australian Governments has become very difficult. The deficits in the accounts for 1929–30 so far announced were as follows :—

Commonwealth	£1,471,000
New South Wales (including railways and tramways)	£4,400,000
Queensland	£723,000
South Australia	£1,626,000

It was agreed at a recent conference to publish monthly statements of revenue and expenditure. For July and August these statements show a heavy falling off in revenue. For example, it is now anticipated that the Commonwealth budget will show a deficit of approximately £10 m., chiefly on account of the decline in customs and excise revenue. The budget is to be revised, and all State Governments are now making further cuts in expenditure, and in most instances increased taxation will be necessary.

[1] In June 1930 the gold held by the Commonwealth and private banks amounted to approximately £23 m. If reserves of 40 per cent. of the note issue are maintained, and a further £2 m. kept for cash in the banks, the surplus available for export, apart from the annual production, would be £3 m.

[2] The total short-term indebtedness of Australian Governments in London was stated by Sir Otto Neimeyer on August 21st last as £18 m. due to the Commonwealth Bank, £8 m. to another bank, and £10 m. in Treasury bills. There is doubtless also a considerable amount of private short-term indebtedness, and in Australia considerable sums are held for transfer.

V

In extricating herself from this extremely difficult situation Australia may take one of three courses of action, each of which involves a fall in real wages and the standard of living. She may (i) deflate rapidly and restore exchange parity with London, (ii) peg the wage rate and inflate the price level sufficiently to secure the necessary fall in real wages, or (iii) attempt to stabilise internal prices and reduce the nominal wage rate by the required amount.[1] I have dealt elsewhere with the economic issues involved in these courses of action,[2] and will conclude by referring to the third course as offering the most reasonable all-round solution. It has been shown that this loss of income is about 10 per cent., and this suggests that the basic wage should be reduced by this amount. Such a reduction could be secured by eliminating the Powers' 3*s*. and fixing the basic wage according to variations in the complete index-number covering all items of household expenditure. (See the discussion on the level of wages under III above.) If fixed incomes were also taxed at a special rate, this would distribute the loss of income equitably over the whole community. An increase in the rate of tax on income from property would secure from fixed incomes their due contribution to the loss of income, and this is almost certain to be included in the revision of the Commonwealth budget. It will not be so easy to make the adjustment in wage rates. Whilst the Commonwealth Arbitration Court is the central authority controlling industrial relations, it can only function in the event of a dispute, and has no power to make "a common rule." Each industry must be considered separately, and under the 1930 Amending Act, conciliation commissioners may be appointed in the event of a dispute. This will delay proceedings. By agreement with the States a quick all-round reduction in wages might be achieved, but this course is beset with political obstacles.[3]

These measures if attained would automatically reduce Government expenditure and costs of production, and provide some additional revenue towards balancing budgets. If accompanied by an increase in the rate of exchange to, say, 20 per cent., substantial relief would be afforded to the export industries. The

[1] A variation of this course would be deflation over a period of years and the ultimate restoration of exchange parity.

[2] *Credit and Currency Control* (Melbourne University Press, 1930), Chap. VI.

[3] The Commonwealth Court is now reviewing the basic wage, having already decided to suspend the award in Government Railways. If it reduces the basic wage for railways, this will be an important decision on the principle at issue.

increased prices of exportable goods and of imported goods, both directly consumed and entering as raw materials into the production of other goods, would be offset by the general decrease in prices due to the lowering of the wage rate. Prices would, therefore, remain about their present level, and this would have a very salutary effect upon the internal situation. The export industries would, therefore, gain by the full amount of the increase in the rate of exchange. Assuming the effective rate at the moment to be 8 per cent. and export production (exports plus home consumption of exportable goods) to reach £135 m., an increase of 20 per cent. would add approximately £16 m. to the income of export industries, as measured in Australian currency. This addition to income in these industries would increase their spending power, and thus act as a powerful influence reversing the present trend towards reduced output and increased unemployment in the sheltered and protected industries. Further indirect losses of national income, originally caused by the reduced spending power of export industries, would be avoided and a process of recovery initiated. The volume of export production would not suffer a serious decline, but in some cases, notably metals, there might be an increase. Thus the capacity of Australia to meet her overseas commitments would be improved. The partial restoration of national income would also have a beneficial influence upon Government finance. At present revenue is declining rapidly, but this drift would be stopped and some recovery in revenue could reasonably be anticipated. It is true that the interest burden on the overseas debt, when measured in Australian currency, would be increased by about £6 m. Against this must be set, first, the increase in customs revenue. Goods are valued for the purposes of customs duties upon the Australian price, and if the customs revenue at parity of exchange amounted to £20 m., there would be an addition of £4 m. under a 20 per cent. exchange rate. Moreover, the maintenance and possible increase of exports would enable heavier importations. If exports at a 20 per cent. exchange rate were £10 m. greater than at parity of exchange, the addition to customs revenue on account of the increased imports would be £2·5 m. Thus the increased cost of remitting interest payments abroad would be covered, and the partial restoration of national income would leave a balance of extra taxation to meet other Government commitments.

The monetary policy involved in this proposal would require careful handling. The Commonwealth Bank could act as a

complete central bank announcing its intention to buy and sell exchange at the rates quoted. In order to stimulate confidence it might purchase Government securities, thus lowering the rate of interest on Government bonds, facilitating conversion and increasing the supplies of credit available to the other banks. Confronted with the prospect of stable prices, it would not be necessary to proceed with a heavy deflation of bank advances and easier credit conditions could prevail. The policy of the Commonwealth Bank would involve some extension of credit and perhaps a slight increase in the note issue. This would have a good effect provided the price level did not rise. In this event it would be necessary for the Commonwealth Bank to reverse its policy.

The rise in the exchange rate would be regarded abroad as an unhealthy development. That is inevitable, but a legitimate answer would be found in the contention that without such a measure it would not be possible for Australia to pilot her way through an extremely difficult position successfully, and without serious distress. If the situation in Australia were kept in hand, a high exchange rate would be readily accepted. Australia has a breathing space of two years in which no overseas loans fall due. If the policy had proceeded successfully, these conversions could doubtless be arranged even with such an exchange rate. It may be doubted, however, whether something more might not be required. If Australia takes the measures suggested, involving as they do a reduction in the standard of living, and heavy increases in taxation, her recovery would be expedited if overseas borrowing could be continued, though at a progressively lower amount. The sudden cessation of borrowing would not have happened under normal circumstances. It is all the more important that it should not take place under the present abnormal conditions.

D. B. COPLAND

The University of Melbourne,
October 8, 1930.

REVIEWS

Recent Economic Changes. By E. F. Gay, W. C. Mitchell, and others. A Report of conditions in the United States, 1922–1928, made for the Committee on Recent Economic Changes of the President's Conference on Unemployment. (2 vols. 7½ dollars.)

Now that foreign observers seem to be wearying in the search for the causes of American prosperity, those who are enjoying that prosperity are beginning to take up the chase; all the more eagerly, perhaps, since gloomy clouds have begun to appear on the formerly clear industrial sky. When these two volumes were published, however, in 1929, the decline which was to come with the Stock Exchange crisis had not announced itself. Some of the most astute observers were convinced that the speculative boom was the normal and healthy reaction of the industrial boom and that no regression was to be expected. In some ways, therefore, this account of the nature of the economic changes which have taken place in the United States since the war is already out of date. Nowhere in the 943 pages is there any strong suggestion that the crisis of late 1929 was blowing up, or that the tremendous increase in industrial capacity and output in 1928 and 1929 was anything save an acceleration normal and proper and capable of being maintained, provided due caution were exercised.

This work is the product of a type of collaboration which has become very popular in times of national economic emergency in the United States since the end of the war; that is, to appoint a national committee of business men who, informed by the best technical and economic knowledge, might be expected to give the sound advice of those who are practising what they preach. Whether this method is sounder and more valuable than the older system of appointing a Government Committee which represented other interests than business, and sought its findings by the oral cross-examination of witnesses, is open to question. But, in a society as dynamic as that in the United States, there is much to be said for expedition, and that the newer method certainly gives. The vast mass of material presented here may be divided into three parts. The report of the Government Committee itself is merely a note of some twenty pages. The

investigations carried through, under the auspices of the National Bureau of Economic Research, by independent investigators cover the great bulk of the two volumes. The whole is rounded off with a short summary and review by Professor W. C. Mitchell.

The separate pieces of research may be considered first. They form a thorough survey of the main phases of American economic life and, since they have been carried through by specialists in constant touch with their subject, they constitute probably the most comprehensive survey, in quantitative terms, which has ever been made of any nation. But the very fact that they are quantitative necessarily involves a limit to their range. In a work dealing with American economic life as wide-sweeping as this, it is rather surprising to find that there is, save incidentally, no mention of the effects of the tariff; that the "theory of high wages"—so intriguing to European observers—gains only passing notice; that the problem of over-capacity appearing in many industries is almost ignored, and that no attempt is made to assess the net economic effects of phenomena peculiar to this society, such as intensive advertising, "high-pressure" salesmanship, the legal maintenance of competition or the social consequences of the growth of large-scale production. It is perhaps ungracious to complain of omissions when so much is given that, in a review, space prevents an adequate treatment of the mountain of facts set forth.

Professor Gay aptly introduces this section by summarising the many theories which have been put forward by outside observers to account for American prosperity. One gets the impression that put side by side in this manner most of them cancel out, plus and minus. In a chapter on Changes in the Standard of Living, by Dr. Wolman, it is made clear that, for the average person, consumption has steadily increased and continually diversified, but the conclusions are tempered by cautions that the statistical material available tells very little of the relative changes in the standard of different classes of American society. The section on industry reveals rapid changes in the scale of operation, "efficiency" and location. Professor Thorpe's contribution to this chapter is, indeed, admirable in method and interesting in result, even if it raises more questions than it answers. Using Census material, he throws doubt upon many assumptions which have gained currency. The individual establishment in the United States is not growing rapidly in size, when measured by the number of wage-earners; there is no definite proof that operation on the scale which has become common in American

concerns brings productive economies and, even on the score of stability, the large firm does not appear to have all the advantages. In addition, Mr. Thorpe breaks into quite new fields in his efforts to measure the extent of the merger movement and brings out some striking information concerning the rapid delocalisation of industry. The same bewildering change in methods and efficiency of production, so far as this can be measured, are to be discerned in the special chapters on Construction, Transportation and Marketing. The great volume of construction work appears to have contributed in large part to the industrial prosperity since the war. In the world of transport, the struggle between road and rail appears to be the chief factor in the situation. In shipping the reactions of the war building and the opening up of coast-wise trade between East and West through the Panama, with its repercussion upon industrial localisation, are the prime elements. Marketing changes, with the appearance of the chain store and the growth of instalment selling, appear to be causing a centralisation of markets, since the increased mileage of roads and the growth of the automobile have apparently led to a decline of the local market to the advantage of the larger markets in the bigger towns. The wholesaler is disappearing; hand-to-mouth buying seems to have become an established practice. The amazing variety of economic experience from one industry and one social class to another, which robs the average figure of all significance and makes any generalisation a wild clutching at one side of the situation, is made apparent in a number of chapters in Vol. II. As estimate of the average minimum volume of unemployment by Dr. Givens shows that between 1920 and 1927 the percentage unemployed was never below 5 and averaged 7·8 for the whole period, suggesting that some groups must have felt depression very heavily. Mr. Nourse's chapter on Agriculture shows that the widespread depression there was largely due to the market developments, such as the growth of the automobile, and the mechanical methods, such as the use of the tractor and combine, which have brought prosperity to industry. Professor Copeland's estimates of the national income reveal a constantly expanding income per head, but conditions vary greatly in different parts of the country, and in another section of this work (p. 76) figures are given which show that the average annual income of the farmer, presumably a "family income," ranged between $500 and $1200 in the years 1919–28. On the other hand, the space devoted to banking and financial influences seems to have been too small to allow treatment of the many aspects of

some of the deepest forces operating in American economic life. How far have investment banks been responsible for the flood of combines which have sprung up since 1920? Has the investment trust really brought the stability in the securities market which is often claimed for it? These are matters on which a final answer would be impossible, but the lack of any real information upon them is a definite shortcoming.

So far as one reviewer can pretend to pass judgment upon the skill and caution used in deploying and interpreting the statistical material presented, the task of "fact finding" has been carried through with energy, and the boundaries to the conclusions which could be drawn from statistics have usually been observed scrupulously. In one or two cases, indeed, the investigator seems to have stepped over the line which divides proof from hypothesis. On page 764 a comparison of national income per head in England and the United States shows, in 1924, a figure of $375 for the former and $697 for the latter, and the claim is made that "it seems clear that the average individual is considerably better off in this country than in England, and that the difference to-day is distinctly greater than before the war." But in the absence of any reliable international comparison of the cost of living [1] the only basis for this statement must be common observation, and common observation would suggest to many that differences in the cost of living offset in great measure differences in money income. Moreover, cost of living appears to have risen more rapidly in the United States than in England since 1914. Again (p. 357), a discussion of hand-to-mouth buying, after a good deal of contradictory evidence has been presented, the suggestion is made that in 1927 stocks of goods in the hands of industrial companies were about 20 per cent. less than they would have been if hand-to-mouth buying had not increased from 1920. The basis of this assertion is a table which shows the relation between production and sale for a small sample of companies in each of twenty-nine industrial groups. Of these, eleven groups, containing in all eighty-nine firms, show no general increase in stocks in relation to production, and eighteen groups, containing 152 firms, show an increase. The net result of taking all the groups together is that already mentioned. But the sample of firms taken could not have presented more than about 10 per cent. of the national total production, it almost certainly consisted of the very largest

[1] The estimates which the International Labour Office makes of differences in the prices of necessities in the two countries is most misleading when used to make comparisons between aggregates of all social classes.

companies, and there is no information showing how representative it is. The last word in the true increase in hand-to-mouth buying has probably not yet been said. More serious mistakes occur in the first two parts of the chapter on Industry. Professor Kimball, in pointing to the increase in capital investment per worker (p. 87), shows that the Census records an increase between 1849 and 1919 from $560 to $5000, but he makes no mention of changes in prices, or of the fact that the Census authorities themselves believe that these capital investment statistics are almost meaningless. On the same page there are a number of generalisations upon the economy of large-scale production which do not square with Mr. Thorpe's scientific analysis in a later section. In the section "Technical Changes in Manufacturing Industries" a table is given (p. 97) which gives fourteen series for the period 1890–1927. Some of them are adjusted for price changes, others apparently not so, although no information is given on this matter. Column 2 of that table, showing physical production, disagrees in five years with a similar table (p. 499) drawn up by the originator of the index. Column 3 disagrees in six years with a similar table on page 450. Column 5 purports to show the cost of materials used in manufacture in the United States. But there is no statement as to whether this excludes the duplication that is unavoidably present in the Census figures. If it does not, the figures are meaningless. If it does, then the column does not agree with one drawn up by Professor Mitchell (p. 859). Columns 6 and 13 are based upon Column 5, and therefore share its defects. Column 12 disagrees in two years with a similar table on page 454. But probably the worst example of the careless use of scientific statistical methods in this section is found in connection with Column 8. That gives an index, taken from another authority, of the increase in the value of industrial buildings in 1899–1922. The index, after allowing for price changes, shows an increase (1899 = 100) from 223 in 1915 to 230 in 1918 and to 296 in 1922. That in itself throws grave doubt on the index, for it is hardly likely that the increase was so small during the war, or so large during the post-war depression. Mr. Alford sets about to bring this index up to 1927 (p. 136). For the purpose he uses a Department of Commerce index, which shows quite plainly a very great increase during the war and a sudden decline in building afterwards. In short, he gets his completed index by tacking on to one curve the tail end of another, when the two curves tell quite a different story over the part that is common to both.

These, however, are but isolated examples in a body of description which undoubtedly is sound. What are the social implications of these facts when they are once found? It was never intended that the Committee responsible for the production of this work should make specific recommendations upon the economic guidance of the country. It was undoubtedly hoped, nevertheless, that the critical appraisal of recent economic trends would throw light upon the causes of the present prosperity, and give a clear view of the forces which were making for strength and weakness in the economic situation. For these it is necessary to turn to the report of the Committee itself and to the concluding review of the investigations. The report is disappointing. It adds nothing to the work of the investigators in the way of interpretation. It contains such statements as: "With rising wages and relatively stable prices we have become consumers of what we produce to an extent never before realised," as if the course of wages or the stability of prices has anything to do with how far a community consumes what it produces. It makes such claims as that "the unit cost of production has been reduced," when the only thing that is certain is that production per worker has been increased, and nothing is known of labour costs or capital costs per unit of output. Its main contribution is to stress the importance of a state of economic affairs which is never defined but is variously referred to as "stability," "economic balance," the "balance of consumption and production," "economic equilibrium" or "dynamic equilibrium." It appears to believe that this condition is becoming more evident in the United States. "For the seven years under survey a more marked balance of production-consumption is evident." But this hardly squares with the general complaint that is heard in practically all industries of increasing over-capacity. "Our intricate economic machine can produce, but it must be maintained in balance. During the past few years equilibrium has been fairly well maintained." But is this view consistent with a period when intense speculation was bringing in its train crisis and industrial regression, in which banks and investment banks were forcing into existence many mergers which had no economic justification save the profits to be made in floating their securities and in which agriculture was the increasingly poor relative of industry? There may be "a technique of balance," but it has yet to be evolved, and the first requisite will be a group of definitions outlining what it is necessary to balance, and why. Indeed, the special investigations have very little to say upon the general question of industrial

stability, and that is not all on one side. Professor Mills, in one of the most interesting chapters in the two volumes, comes to the conclusion that between 1922 and 1927 the price system was becoming increasingly stable, although even then it was simply reverting to the pre-war condition. It will be interesting, however, to see what changes in his generalisation will be necessary as a result of events since 1927. Some of the technical changes recorded might also seem to reduce the chances of sharp re-adjustments. The point is well made (p. 215) that the tendency towards delocalisation of industry may reduce the severity of industrial fluctuations. And since industrial skill is becoming more generalised, unemployment through maladjustment will perhaps be reduced (p. 517). But opposing forces are to be discerned. The increased use of electric power and its ease of transfer are likely to make industry more mobile (p. 128), and increase the social loss which arises from change in a complicated industrial society. There appear to be serious doubts whether the increased size of concerns brings increased stability (p. 200). There seems to be little evidence that construction has tended to greater stability in industry generally since 1920 (p. 253). Stability of employment is no greater in the post-war than in the pre-war period (p. 492). It is extremely doubtful whether such forces as intensive advertising or hand-to-mouth buying bring the increased stability which is often claimed for them. Whilst social aims and ends are so vaguely conceived, whilst one form of stability so often necessarily involves another form of instability, whilst the economic theory of dynamic conditions is still so nebulous, the attempts to determine whether a whole economic society is becoming more or less stable and balanced appears to be a vain searching.

Professor Mitchell, in a concentrated review, once again reveals his capacity for picturing the whole economic process, with its endless actions and reactions, its infinite mazes of inter-dependence of parts, and the constant change in the internal structure of an industrial world which yet retains the characteristics of a system. He baldly declares the post-war prosperity in the United States to be due to the fact that "since 1921 Americans have applied intelligence to the day's work more effectively than ever before . . . the old process of putting science into industry has been followed more intensively than before." Even here, however, doubts creep in. After all, the intensive use of machinery and the increased use of scientific methods largely account for the present state of agriculture. The

American industries which are depressed—cotton, coal, lumber, railways—are not to be distinguished from others by a lack of mechanical progress. And there appears to be another factor, not often mentioned, which may account for some part of American efficiency, but which is hardly connected with scientific method. The physical expansion and mechanisation of industry has required large savings. There are some suggestions scattered through these volumes that the necessary capital has been provided at extremely favourable rates of interest (see pages 731 and 769 in particular). May it be that the American saver has become more "efficient," in the sense that he is willing to save much more at lower rates of return than formerly, and has thus hurried on the intensive investment which is impossible in other countries? Many other questions are raised by Professor Mitchell's pregnant analysis. How commonly is the doctrine of "high wages" among employers held (p. 866)? In discussing (p. 886) what might have happened if there had been no restriction of immigration the statement is made that national income would probably have been greater in the aggregate, but less per capita. This would seem to imply that the "optimum population," at least for the time being, had been reached in the United States, but no grounds are advanced for this view.

Even if the present pioneering examination of the American economic system had done no more than raise such questions, it would have justified itself. It has, however, done a great deal more. It has set the seal on a new function of government—the preparation of a running commentary on industrial trends. It has provided a base investigation from which much subsequent work might be measured. It has revealed many gaps in statistical knowledge which might easily be filled. For all these reasons it is to be hoped that the issue of a bulletin of this sort will be a periodical event.

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The National Income and Its Purchasing Power. By PROFESSOR WILLFORD I. KING. (New York: National Bureau of Economic Research. 1930.)

THE investigation of which the results are contained in this volume is in some respects a sequel to the well-known publication "Income in the United States, 1919," issued also by the National Bureau, and many of the statistics have already been given in

other similar publications, especially *Recent Economic Changes*, which relate to the period 1922–28. The present inquiry covers a longer period, giving figures for each year from 1909 to 1928, though most of the statistics after 1925 are marked as provisional.

The great difficulty of using the results of this investigation lies in the absence of clear references to authorities for the figures quoted, the want of sufficient explanation of the methods used in making the rough estimates which commonly form essential parts of the tabular statements, and generally the impossibility of criticising the basis of the figures so as to form any reasonable estimate of their probable accuracy. Statisticians and economists ought not to be asked to accept results on personal authority, and there have been serious criticisms of parts of the earlier works on which this depends. In these circumstances it seems best not to give further currency to any of the estimates till they have been examined adequately with the help of statistical technique, but only to describe the processes and to comment on some novelties of method.

The numbers of persons occupied in the various industrial groups are estimated from various official sources, and they are separated into wage-earners, salaried, and entrepreneurs. Somehow or other, statistics are produced of the aggregate of income in each year in each of these classes, including also an estimate for the annual value of dwellings and some other durable possessions. By a combination of these estimated totals, average annual earnings, salaries, etc., are shown for industrial groups, and many other derived statistics are exhibited in tables and diagrams. At a later stage the income-tax statistics are used to ascertain the number of recipients of income in four very broad groups, but, as usual, no criticism is given of the validity of these figures, and their relationship to the totals already used is not discussed.

The results are throughout stated not only in current dollars for each year, but also in " 1913 dollars." It is argued that since the income computed is spendable income, whether in fact it is spent or invested or arises from earnings or property, the index-numbers to be used for the revaluation (or deflation) ought to be those based on retail prices rather than those based on wholesale prices. Five series of index-numbers are given, said to be applicable respectively to (1) urban manual and clerical workers, (2) farm labourers, (3) farmers, (4) families spending $5,000 annually for " direct goods," (5) those spending $25,000. These index-numbers would be very interesting if we knew how they were compiled. Whichever is regarded as the most appropriate of these series is

applied to each of the columns already given in current dollars. The first section of the book (180 pages, 33 tables and 27 diagrams) contains the analysis so far described.

In the following chapters questions of the value of stocks, shares, bonds, etc., and the various classes of interest paid are considered. An attempt is made to estimate the aggregate of invested capital and its value year by year on the basis of market quotations and index-numbers. The author hardly seems to be aware of the difficulties of such estimates, nor of the work already done on the problems. Undeterred by the ambiguity of the estimates, he proceeds to deflate the dividends and the capital value by one of the retail price indices already used, on the ground that " there is little chance of constructing index-numbers on the basis of articles actually representing the physical wealth of each industry or of all industries combined. Since this method is not practicable, recourse has been had to a procedure which has its advantages and disadvantages. This procedure is to ascertain the comparative physical quantities of direct or consumers' goods which could have been obtained by the owners of the industries in question, at the various dates, had they sold their securities at the market prices prevailing and used the money thus obtained to buy direct goods. This concept is definite and specific." Sufficient comment on the process is to say that by it railroads were worth $17,560,000,000 in 1908, but only $12,100,000,000 in 1925.

The next stage is the adjustment of the realised national income computed in Chapter IV by adding or subtracting the increase or decrease of the value of property, avoiding double reckoning by subtraction from the capital value all new money invested out of income. The whole process is followed out both in current dollars and in 1913 dollars. No doubt in the balance sheet of a company it is correct to value the assets at the beginning and end of the year as an element in assessing the net gain, though in practice there is great variation in the method of evaluation. But no individual considering his income for the year would add or subtract any nominal change in the value of investments which he did not realise. In this respect income is surely defined rightly as for income-tax assessment unless, in fact, a man's livelihood depends on successful stock speculation. Further, the assumption that (*e.g.* in 1921) the nominal increase in capital holdings of $15,000,000,000 could have been realised and spent in direct goods without affecting the value of the stock or the prices of the goods, is evidently not valid, and its utility as a

working hypothesis is very doubtful. In brief, changes in value of capital are not on a parity with realised income, and the two should not be combined, even though it may be useful to show them together. To go further, and deflate all by hazardous index-numbers to value in 1913 dollars, is not to give in any intelligible sense the "Total Income (in 1913 dollars) of the people of the Continental United States," but only the result of hypothetical arithmetic. By this method the income per head in 1915 was $521, in 1916 $254, in 1917 $127, and in 1918 $269, all deflated for the increase of prices.

While there may be difference of opinion about the reasonableness of several of the processes followed, there will be agreement that the results of an investigation of this kind ought to be thoroughly documented, and the exact basis of the statistics shown. The National Bureau of Economic Research is doing a disservice to the progress of statistics by issuing publications of this nature, which are widely quoted as authoritative. A. L. BOWLEY

The Imperial Banks. By A. S. J. BASTER, B.Com., B.Sc.(Econ.) (Lond.), Assistant Lecturer in Economics, University College, Exeter. Pp. ix + 275. (London: P. S. King & Son, Ltd. 1929. 12*s.* 6*d.* net.)

THIS volume is the third of "a series of investigations into some aspects of present-day British banking undertaken by the Department of Economics at University College, Exeter. It represents an attempt to tell something of the history and present position of the well-defined group of London banks operating mainly in the countries of the British Empire." There were twenty-five such banks, of which seventeen were still operating in 1877 and eight of them were established between 1826 and 1840. A disordered state of the currency, high local rates of interest, and lack of capital characterised all the outer Empire, and the local banks were too weak to aid the development of their areas. In Britain, on the other hand, there was abundance of funds for profitable investment abroad, for which Canada, Australia, and the West Indies offered a fair chance of success. In South Africa, it is stated, the Colonial Office was "unwilling to subject the feeble Government institutions to competition from powerful London banks," while in India the East India Company was concerned to support the Presidency banks, and the important Agency Houses in Calcutta had established an effective system of private banks.

The approved method of establishing the Imperial banks was by Royal Charter, since, apart from questions of prestige, such incorporation secured the privilege of limited liability and imposed upon the British Government some moral responsibility towards the subscribers of capital for the substantiality and good management of the proposed promotion. By 1840 the Treasury and the Board of Trade worked out a code of regulations forming a model charter. The liability of shareholders was limited to twice their holding, debts and engagements were not to exceed thrice the paid-up capital plus deposits in specie or Government paper, periodical accounts were to be published; no monopoly was conferred and the notes of the banks were not legal tender. "Both the colonial joint-stock banks proper, and the chartered Colonial banks operated from London, were subjected to supervision from the time of their foundation. Their flotation and organisation, the kind of business they should do, their relations with their shareholders and with the colonial governments, were all supervised, more or less closely, by the home Government, with the help of a set of rules applied universally throughout the Empire."

Omitting the Ottoman Bank (1826) and the Bank of Mauritius (1831), the charter of which was obtained by special arrangement from the Governor, the first bank chartered by the Crown to operate in the Colonies under direction from London was the Bank of Australasia, which started in 1832 and received its charter in 1835. It met with great opposition from the local banks and the State Governments till its competition by reducing discount rates and providing more credit brought it into favour. The Bank of South Australia, which started in 1837 and received a charter in 1841, followed. The Colonial Bank (chartered 1836), with a capital of £2,000,000, "was in its day the most important Empire Bank in existence"; it was really established by the West India merchants, and is now in the Barclay group. Banking was more strongly established in Canada than in the other colonies and, consequently, the Bank of North America, incorporated in London in 1836 with a capital of £1,000,000 and chartered in 1840, met with less opposition, despite its power; it was not allowed to accept deposits in London or, till 1852, to issue notes under £1. The only other chartered bank operating in Canada (except the Bank of Montreal and the Bank of Quebec, which worked for a short time under Royal Charters obtained in 1837 pending the securing of local charters), was the Bank of British Columbia, founded in 1858 at the time of the gold discoveries in that province.

In 1836 a numerous and influential body of promoters proposed to establish the Bank of India with a capital of £5,000,000, which was intended to absorb the existing banks, but they could not overcome the hostility of the Indian Government and the Bank of Bengal, and a similar project for a Bank of Asia in 1840 covering all the East broke down because the East India Company objected to its being allowed to do exchange business. The Bank of Ceylon, chartered in 1840, was an unsuccessful "planters' bank," absorbed in 1849 by the Oriental Banking Corporation, founded in 1842 and chartered as the Oriental Bank in 1851. The Oriental Bank had the right to do exchange business in India, and to prevent its having a monopoly of such business the Chartered Bank of Asia and the Chartered Bank of India, Australia, and China received their charters in 1853, but without the right of note-issue. Government opposition in South Africa was successful in excluding the Bank of Australasia from that territory and in maintaining the weak local state banks.

"The privilege of limited liability, for which the Chartered Banks had been willing to submit to so many hampering restrictions, was extended to any banking company of seven persons by the Act of 1858 and the consolidating Act of 1862," and between 1857 and 1866 some twenty-seven limited liability banks were founded to operate in the British Empire. The gold discoveries were a stimulating factor, but the Overend Gurney crisis proved a severe test for the weaker institutions and several chartered banks were brought down. The charter system, however, had now served its purpose in carrying Empire banking through its early stages, and had to yield before the greater flexibility of the new system. In 1880 the Treasury drew up a new Model Charter in which it surrendered most of its powers and duties.

A very important chapter deals with central banking in the Empire. The story of the crisis of 1893 in Australia cannot be repeated here, but that disaster led to the founding of the Commonwealth Bank in 1911, to carry on a general banking business, virtually as a government bank, in order to break the banking "ring." In 1924 it was converted into a Central Bank, but still retained its commercial functions. "The Commonwealth Bank does not control reserves, it cannot manipulate money rates and thus control credit. The Anglo-Australian banks and the local Australian institutions are far too interested in the London money market to make much use of a local Central Bank on the orthodox model, even if one were provided, and they are hardly likely to look for general leadership to a competing institution." In India

the situation was complicated by the conflict of interests and powers between the Presidency and the Exchange Banks, but the problem of central banking "has resemblances in principle to that in Australia." The Imperial Bank is expected to function both as a central and as a commercial bank, but it has no control over the note issue. Moreover, "in times of stringency the Exchange Banks, whose Head-offices are all abroad, might (and in most cases do) look to London, and not to the Imperial Bank for assistance, and in any case the constant availability of this assistance would at all times make it difficult for the Imperial Bank to bring the market under its control by any of the devices known to the more fortunately placed European banks." South Africa has only two large commercial banks, the Standard and the National, both directed from London, but in 1920 a Central Bank was established after the American style, to hold the reserves of the other banks, to have the sole right of note-issue, to discount bills, undertake exchange business, etc., but not to accept time deposits or pay interest on current accounts or grant overdrafts. "In regard to exchange, it can exert great influence on rates, as it normally holds large London balances, on account of its connection with the Government"; the gold producers also sell gold "to the Reserve Bank for minting, and thus the Reserve Bank now ships gold for sale to London and re-sells the sterling obtained thereby, the effect being further to strengthen its influence in the foreign exchange market." There are no central banks in Canada or New Zealand. Mr. Baster concludes that the lack of local money markets and the close association of the local banks with London must definitely restrict the development of central banking in the Dominions and Colonies.

A final chapter treats of the progress of the integration movement in the banks of the Empire, and Appendices deal with Empire trade, the list of chartered banks, and financial expansion of the Empire banks. Mr. Baster can rightly claim that his book "breaks entirely new ground," and it is to be recommended as interesting, informative and important.

HENRY W. MACROSTY

Unsolved Problems: National and International. By JOHN S. HECHT. (Jarrolds. 1930. Pp. 288. 16*s*.)

THIS is a very robust, vigorous and combative book. It is probably true that for the ordinary reader the unsolved problems will still remain unsolved at the end of his perusal of Mr. Hecht's

volume; indeed, he may be in some doubt as to what exactly is the solution which Mr. Hecht recommends. One ought not to read Mr. Hecht for his conclusions, which have a way of wrapping themselves in a certain obscurity and vagueness. He should be read as a heretic, rejoicing in his heresy; and, so read, he fulfils the highly useful purpose of initiating discussion on fundamentals, and thereby arousing from his complacency the complacent economist. For it is a remarkable quality in Mr. Hecht's work that though professedly it discusses two questions only—one national and the other international—he proceeds on the perfectly sound principle of the ultimate relevance of all things to each other. Consequently there are few economic questions which are not somewhere discussed in his pages. He is an adept at raising hares; the chase, while it lasts, is exciting and exhilarating; it is only in retrospect that somehow one has difficulty in recalling what exactly, if anything, happened to the innumerable company of hares that provided the day's entertainment.

The first of Mr. Hecht's problems is that of wages, with which is connected a just distribution of wealth and many other questions. His essential starting point is that wages spring from division of labour, and he quotes with approval Condillac's definition of wages as " the share of the product which is due to the workers as co-partners." In his further elaboration of what this share should be, Mr. Hecht's argument—and this quite apart from any consideration of the validity of his conclusions—follows a course which to most will appear logically inadmissible. In effect he contrasts the period before the introduction of division of labour, when every family worked on its own, and when " every worker, with the assistance of his wife, must have been able to produce year by year the subsistence of an average family " (p. 29) with the subsequent stage, following the introduction of division of labour. From the comparison between the two stages Mr. Hecht draws the inference that, since division of labour increases production, a similar minimum reward at least must be paid to the worker to-day. With this conclusion few will quarrel, but likewise few will accept the reason Mr. Hecht gives: " Did he receive a lower wage, he would be better off without division of labour." For in dealing with our problems to-day no appeal can usefully be made to what might have happened under conditions which have been irrevocably abandoned and which are wholly hypothetical.

The same somewhat irrational appeal to history underlies Mr. Hecht's arguments for Family Endowment, which he incor-

porates as an essential part of his wage theory. Surveying history, but not too closely, he lays down this general principle:

> Without division of labour a share of the product is really due *from* workers having *less* than the average number of dependents *to* those having *more*, and when labour is divided the *minimum* wage must *vary* according to the number of dependents (p. 30).

The basis for this sweeping statement is that in the early community the "worker who came of a large family had . . . perforce to be supported during adolescence by produce taken from workers with less than the average family" (p. 31). To be quite candid, one does not know very much about the "worker" in that simple agricultural community which Caesar visited; but Mr. Hecht goes further, and asserts that up to the eighteenth century the payment of wages according to the number of dependent persons was the custom in every civilised country. This doctrine of "the universality of family endowment in bygone days" can only be accepted by those who prescribe to history the lessons which she shall teach.

But though Family Endowment is fundamental to Mr. Hecht's view of wages, it is only one of a vast number of topics on which he finds occasion to discourse. Not infrequently he is guilty of tilting at what he conceives to be accepted economic doctrine rather than at economic doctrine as it is ordinarily understood by the faithful. It is possible to note here only a few of the more exciting discussions. Mr. Hecht's fundamental view of wages involves at bottom a belief in indefinite progress, and at times one catches a whiff of the pure optimism of Carey. Thus the Law of Diminishing Returns has no foundation; it was "conceived by a country parson who should have known better" (p. 40). There is a lengthy attack on the idea of competition as the prime motive to progress; with Rae, Mr. Hecht attributes progress to invention and to man's endowment with productive intelligence. The discussion is interesting, but one rightly suspects that there is behind it a good deal of confused thought, when it is suggested that self-interest provides a better stimulus than competition. The Law of Supply and Demand is another subject on which Mr. Hecht writes strongly, and apparently feels strongly; so also he exposes the "utter fallacy" of that dowdy platitude, the Quantity Theory of Money, though, indeed, much of his exposure of its "hollowness" amounts merely to a more careful statement of the theory than is sometimes presumed to be necessary on a first acquaintance.

One of the most revolutionary parts of Mr. Hecht's discussion

is that which concerns value, where the tendency of his argument is to overthrow all tradition, and to prove that value is an intrinsic physical property of matter. " Indeed, if value is not an intrinsic physical property of matter, the expressions good value, a bargain, your money's worth . . . are, or all language seems to be, meaningless " (p. 98). His absolute is a physiological one, resting on fat, protein, salts and vitamines; in fact, " the minimum average daily food consumption of a whole people represents a definite quantity of commodities in every climate " (p. 92). The value of such a definite quantity of commodities rests on the fact that it keeps a family alive for a day, and therefore their value " is absolutely independent of the esteem in which they are held by a particular individual at a particular time " (p. 93). Here, then, is the economic constant; but though we may be confused by the breathless argument, our confusion is not so great as to lull our suspicions that Mr. Hecht is still more confused. For this economic constant is not a value at all; these things may be capable of rendering a constant service; but it is the purpose which they serve, and not the value attached to that purpose, which is constant. And Mr. Hecht's difficulties emerge on the application of his theory on the basis of necessaries, time-saving devices and luxuries. For luxuries frankly elude his test. " For pleasure there exists no known measure " (p. 99), and therefore to luxuries a definite utility cannot be ascribed; their value cannot be measured. So also it is apparently unnecessary to measure the value of coal, iron, tin and all other such things; chiefly because they " are provided by nature; man has merely to find, fetch and clean them " (p. 100). All this may be a theory of something; but it is certainly not a theory of value.

Only one point in the second part of Mr. Hecht's volume can be noticed here. In his solution of the international problem, he reveals himself as a thorough-going Protectionist, for whom it is difficult to find any parallel in the history of economic doctrine. At the root of all his theorising, however, there lies an ambiguity of definition which vitiates much of the crispness of his argument. His theory rests on a sharp distinction between complementary imports and competitive imports. Even admitting that there is an obvious broad distinction, and that the older theorists rather assumed the case of complementary imports in their theory of foreign trade, one wonders whether, in fact, the distinction can be drawn with the assurance and firmness which Mr. Hecht's theory seems to postulate; and one's doubts are confirmed when one reads that imports which remedy any deficiency in the home

supply must be regarded as complementary (p. 274). Mr. Hecht's ideal is the rigid exclusion of competitive imports, almost the *geschlossene Handelsstaat*, and, as not infrequently, his point of view comes out in curious *obiter dicta*. Thus, though we have in the past been proud of our shipping, Mr. Hecht tells us that "if one considers the hardships undergone by those engaged in maritime transport, carrying other people's goods about the world seems a lowly ambition for a civilised people" (p. 225).

To read Mr. Hecht is like walking on the Downs on a stormy day in March, when one is buffeted by contrary winds from every quarter of the heavens, and returns home at night tingling, but none the worse. Yet the book has two pervading defects. First, it has all the appearance of having been written in a hurry. There are sweeping generalisations, so easy to make, so difficult to verify; there are arguments which ought not to have reached a second reading; there are, on points of detail, fatuous criticisms of Adam Smith, which are little better than quibbling debating points. The second general criticism is that it would be well if Mr. Hecht mislaid his Gide and Rist. It would ill become anyone to speak ill of that most excellent publication; but even a good book may become a snare, if relied on too exclusively. Mr. Hecht sees the whole history of economic doctrine through the eyes of Messrs. Gide and Rist, whom he quotes in season and out of season. It may be academic pedantry, but one dislikes having the very non-Smithian language of Gide and Rist presented to one as the very words of Adam Smith. In the eighteenth century they spoke with a dignity of their own in Kirkcaldy.

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Industrial Society. By L. C. MARSHALL. (Cambridge University Press. 3 vols. 45*s.* 6*d.*)

THESE three volumes are a revised and enlarged version of an earlier work composed by Mr. Marshall for the University of Chicago Press, and intended for use by teachers and students in the first part of the college course. The material of each volume consists of passages from a large variety of economic writers, sometimes given in full, sometimes condensed, and giving an orderly arrangement of the actual economic material and of the different angles from which it is appraised and judged.

The first volume, entitled "The Emergence of the Modern Order," is historical, giving a rapid selected survey of the steps by

which the animal man advanced to his present competence in handling his material and human environment for the better satisfaction of those needs where scarcity was the prime obstacle. The earlier types of economic organisation, slavery, serfdom, the manor, the gild, the beginnings of commercial, financial and industrial capitalism, carry us forward to the business structure of the modern world.

Volume II, entitled " Production in the Modern Order," is engaged in two closely related but distinguishable tasks. First, it presents an objective account of the forms and functions of the different types and units of production, with an analysis of the part played by natural resources in supply of materials and power. It next proceeds to set out the human factors of skill and knowledge, together with the personal incentives which under social control constitute the main operative forces in a system of competition and private property.

The new technology, especially in America, is described in considerable detail, in its application to agriculture, mining, manufacture, transport, commerce and finance, and the personal problems of economic conduct, in respect of motives of efficiency are subjected to full discussion, the differing views of economists upon controversial questions receiving fair representation. Specialisation, Concentration, Mass Production, and the modern trends towards combination and monopoly are illustrated from a number of separate sources, in their bearing upon efficiency and productivity.

The third volume, " The Co-ordination of the Specialists in the Market," spends its opening chapters in presenting in detail the features of the money market, as chief co-ordinator and director of the flows of capital into the several industries. A market is primarily a monetary phenomenon from the standpoint of its sellers and buyers, so that the money market, as presented in banking, insurance and finance, is the market of markets, the central power-status of the economist system. An interesting discussion as to the influence of rates of interest on saving, and of the theory of interest itself, is interposed between passages descriptive of the play of money markets.

Money is not, however, the only co-ordinator. The labour market, with its flows of working power between places and trades, though less facile in its mobility than money, is of great importance. Thus we are introduced into theories and practices of wage policy, trade unions and governmental regulations, and other influences affecting the wage-contract and the efficiency of labour. But

enterprise and management, standing behind the flows of capital and labour, the brain-controls of industry, the determiners of risk-taking, the calculators of future markets, require a close consideration, for upon their efficiency " profits," the central urge of capitalist industry, chiefly depend. How far is the co-ordination of private enterprises and individual seekers after gain a sound economic system? Some divergent answers to these questions are given in the closing sections of this comprehensive work.

Mr. Marshall's skill in selection and in the difficult task of organising his mass of material is to be commended highly. I am not, however, sure that he is justified in leaving out all consideration of the building up of standards of consumption and of the interaction between the changing arts of production and consumption. In his introductory passages he relegates the analysis of " wants " to something he calls " psychology," and which lies outside economics, the latter being concerned with " the processes by which men get a living."

Critical readers may sometimes question whether in his sections of interpretation Mr. Marshall has always given equality of opportunity to two different sides, especially in modern monetary problems. But, taken as a whole, the book is conducted with skill and impartiality, though American first-year students must possess a high measure of intellectual acquisitiveness if they are prepared to assimilate the immense amount of complicated food these volumes provide.

J. A. HOBSON

The Economics of the Coal Industry. By R. C. SMART, M.C., M.I.M.E. (London: P. S. King & Sons, Ltd. 12*s.* 6*d.*)

THIS book is principally devoted to a review of the present economic position of the Coal Industry, but, as the author points out, the close relation of that industry to the heavy basic industries in general calls for a study of the " industrial architecture " of the whole of these industries. In his rather cumbersome style he states that " our heavy industries, operating largely on an unremunerative basis, are distinguished by a heavy burden of excess capacity of production, together with the principle of the retention of foreign markets at the cost of high prices to the home consumer." In view of this, he advises financial reorganisation along with the scrapping of redundant plants. He also

states that " a fruitful source of error subscribed to in this country is the taking from industry of too substantial a sum in dividends."

The subsequent chapters of Mr. Smart's book are largely based on these assumptions, but he has produced no evidence to prove their accuracy. If he had made an investigation of the facts he would have found that the dividends paid by these unremunerative industries have been almost negligible during the last decade. In Chapter III he gives a very complete summary of the present condition and prospects not only of the British Coal and Iron Industries, but also of the Gas Industry, Electrical Power Generation, and the Cotton and Woollen Industries. In the following chapter the European Coal Industry is similarly dealt with. Summing up these chapters, the author says, " It is obvious that we have to face the most critical time of the post-war period before we recover our lost competitive strength. The danger of the whole position," he adds, " lies in the stubborn opposition of the British industrialist to the recognition of the economic position."

" Torpescence and stolidity of temperament," he goes on to say, " is an unfortunate characteristic generally of those in control of our heavy industries to-day and in an increasing respect in regard to coal-mining."

It is with the Coal Industry that the author's relations are the most intimate, and in Chapter II he gives an excellent account of certain collieries with which he is acquainted, and finds them to be most efficient and up to date. In view of this finding, are we not compelled to assume that his condemnation of the " torpescence and stolidity " of the coal-owners as a body is based on a gratuitous assumption of the backwardness of the collieries with which he has no acquaintance? Surely this is reversing with a vengeance the accepted method of arguing from the known to the unknown! He also finds that " the general level as regards mechanisation of plant and engineering methods in this country is sadly behind that of our competitors."

In support of this contention he gives the output per man shift on the Ruhr as 26 to 29 cwts. The actual figure as shown by statistics published by the Mining Association of Great Britain is 24·44 cwts. The corresponding figure for Yorkshire is 24·5 cwts. The author should have mentioned that the figures for the Ruhr are considerably above the average; for example, the output per man shift for the Saar is under 17 cwts. and for Belgium is less than 12 cwts.

It would surely have been relevant to a discussion on the

subject of European competition to have shown also the comparison between the wages earned per man shift.

The table given on p. 28 of the book shows that in the British coalfields the average earnings per man shift in August 1928 were 9*s*. 3·25*d*. For the same month the earnings per man shift on the Ruhr were 8*s*. 7·98*d*., in Lower Silesia they were 6*s*. 3·60*d*. and in Polish Silesia 4*s*. 1·43*d*., according to statistics.

The author appears to be very much impressed by the economies effected by Rationalisation in the Ruhr Coalfield, but it is noteworthy that German economists are not by any means convinced that the results obtained justify the enormous outlay incurred.

In discussing marketing schemes, Mr. Smart strongly advocates the closing of collieries which are at the moment unable to earn a profit and the concentration of production at the more fortunately situated collieries. If collieries were manufacturing concerns with more or less static conditions, this proposal would have considerable weight, but unfortunately, owing to changing circumstances underground, the colliery which to-day is prosperous may easily become the reverse within a year or two. On the other hand, the so-called " uneconomic colliery " is almost invariably being carried on in the expectation that underground conditions will improve.

There is one point which Mr. Smart appears to have overlooked in connection with voluntary marketing schemes, and that is the presence of a recalcitrant minority. In all departments of human activity there is always a small minority who refuse to join in schemes for collective benefit, hoping to secure the benefit of these without contributing to the cost. It is the existence of these minorities in the Coal Trade which has led a Socialist Government to form it into one of the hugest Trusts ever known in the history of industry. Under this law British coal-owners are compelled to join a Trust which has the power to fix minimum prices, and to punish by heavy fines those who sell coal below such prices.

It is a pity that the author, by the continual intrusion of offensive comments on the mentality of both the owners and workmen, has spoiled what might have been a good and useful contribution to the discussion of the difficulties of the present economic position of Great Britain. Such a statement as (p. 206) " Directors of Companies that have possibly paid up to 900 per cent. in dividends in about thirty years will say ' To hell with posterity depreciation and development accounts, let us have our

dividends,'" is certainly not helpful in the discussion of this most important and intricate subject.

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The Past and Present of Unemployment Insurance. (Sidney Ball Lecture, 1930.) By SIR WILLIAM H. BEVERIDGE, K.C.B. (London: Oxford University Press, Humphrey Milford. 1930. Pp. 47. 2*s.* net.)

What's Wrong with Unemployment Insurance? By RONALD C. DAVISON. (London, New York and Toronto: Longmans. 1930. Pp. 73. 2*s.* 6*d.* net.)

BOTH authors emphasise the change in the Unemployment Insurance system from the original intention of its founders and of the Act of 1920. The present position, indeed, calls for a careful reconsideration of what should be its scope and object, and since, as Sir William points out, the attempt to use it to deal with all the unemployed is bound to fail, it is necessary to work out the limits within which Unemployment Benefit rather than other methods can afford the right instrument for the purpose. To do this is one fundamental object of both authors. It is not a question of "provision" against "no provision," but rather of the form in which different classes shall be provided for. Sir William, in his *Unemployment, a Problem of Industry*, emphasised twenty years ago the need to provide both "for those who are working and those who are waiting for work," in the sense of being idle from the operation of purely industrial causes, and likely before long to return to the ranks of industry. But at the present day there is the very difficult problem of the large number who from many causes have little or no opportunity, without re-training, of returning to the ranks of the genuinely employed, and who are not suitable subjects for the benefit.

The original experimental system of 1911 and, at its first introduction, the almost universal insurance of 1920, aimed mainly at dealing with limited risks of industrial fluctuation, and established a definite contractual relation between the benefits received by the individual workman and the premiums paid in respect of him. But, as Sir William remarks, this system "never had a chance," and he sums up the history of the last ten years as a change "from insurance by contract to relief by status," In fact, the effort has been made, as with the proposals of the Blanesburgh Committee, to provide benefit for all genuine unemployed for the

term of their unemployment, though, indeed, by reason of the provision for the so-called "transitional periods," the safeguards proposed by the Committee have never been put into effect. The present working of Unemployment Insurance is strongly condemned by both authors as out-relief in the form of insurance, with employers' and workmen's contributions forming in the circumstances one of the worst of taxes—a tax on employment.

Both authors agree in recommending a limitation of the system of insurance to those classes of workers who are suited for it, if necessary on more generous lines. Mr. Davison, for instance, proposes a maximum of one week's benefit for three, and not, as in the Act of 1920, six weeks' contributions. Both also favour the use of a reformed Poor Law Authority to deal with the unemployed outside the Insurance system. Mr. Davison devotes a considerable portion of his space to dealing with this subject, including a discussion of the suitable financial contribution by the central government. His views obtain much support from the work already done by the London Public Assistance Authority. He makes out on the whole a good case for this proposal, though he perhaps skims rather lightly over some of the difficulties, notably the case of the backward authorities. He is also, perhaps, unduly severe on the considered proposals of the Blanesburgh Committee, which, owing to the "transitional" provisions, seem never yet to have been fairly tested. Sir William has some excellent criticisms of these proposals in principle and detail.

Sir William's general treatment is concerned mainly with the past history of the Insurance System and with certain specific suggestions. Like Mr. Davison, he trusts to a reformed Poor Law Authority for those unsuitable for insurance, though without working out this proposal. His treatment of the origins and development of the system is unusually good and of very great value. It is possible, indeed, to criticise certain detailed points. Thus, refusal of suitable employment, as a specific ground of loss of benefit under the Act of 1911, appears to be omitted. Similarly, the statement that "all important trades," presumably referring mainly to the bigger textiles, were kept out of the Act of 1916, appears too sweeping in view of the inclusion of such industries as iron and steel, chemicals, and explosives. But these are very minor points.

He also rightly stresses the undue burden put upon the fund by some of the more fluctuating or worst organised trades. The system, whereby, as with dock-labour, an industry can receive several times what it puts in, or whereby this and certain others

" have since the war built up again their old under-employed reserves of labour and thrown the cost of maintaining them on other industries and the taxpayer through insurance," obviously needs revision. But Sir William perhaps over-emphasises this disparity between the contributions and benefits of different industries. That the disparity is excessive can hardly be denied, but allowance must be made for the fact that the greater unemployment in the fluctuating trades, as with the seasons in building, long-period fluctuations in the machine industries, and day to day movements at the docks, is caused partly by the needs and demands of the public and the less fluctuating trades, and to that extent should be met by the former in the State contribution and by the latter in paying contributions in excess of what they receive in benefits. Similarly, too much stress is perhaps laid on the relation of individual contributions and benefits since, as was pointed out by the Blanesburgh Committee, so long as total contributions and costs balance, the scheme as a whole may be held to be solvent.

" The dangers lie not so much in the risk of demoralising recipients of relief, as of demoralising governments, employers and trade unions, so that they take less thought for the prevention of unemployment." In this connection, Sir William holds that individual malingering is greatly exaggerated and that what there is could be eliminated by adequate co-operation of employers with the exchanges in notifying vacancies for work. Indirectly, however, there is the tendency of trade unions to insist on uneconomic wage rates, and to " scarcely veiled manipulation of the scheme by employers and workmen in concert," as with the use sometimes made of the short-time system. His most interesting proposal is for the scheduling, under financial conditions much more severe than the normal, of trades with excessive unemployment, such as building, docks and cotton, to enforce reorganisation and get rid of surplus labour. His treatment of this and many other subjects well merits the most careful consideration.

N. B. DEARLE

Co-operative Marketing of Agricultural Products. By NEWEL H. COMISH. (New York: D. Appleton & Co. 1929. Pp. xxii + 479. 12*s.* 6*d.*)

As the American custom of printing what is technically known as a " blurb " upon the jacket of books has been adopted in the case of the present volume, an English reviewer cannot, in the

first instance, do better than quote from the designation of its scope as approved thus by author and publisher. "Congress has entrusted half a billion dollars to the newly created Federal Farm Board for the extension of the co-operative marketing movement as the most promising means for relieving the distresses of agriculture. What has the Farm Board to work on? What is the status of co-operative marketing now, and what has been the experience of co-operatives in the past? What are the special problems facing co-operative associations and how must these problems be met if co-operatives are to operate efficiently and fulfil the hopes of the country for a solution of the farmers' needs? All these questions and many more are answered in this comprehensive and timely book. The author writes not only as an expert observer of the co-operative marketing movement generally, but from inside experience in the organisation and direction of co-operatives. His study is discriminating and practical, presenting facts without bias and pointing out dangers and difficulties as well as the successes of co-operative experiments." Unfortunately, the pages that follow contain no reference to the creation, the functions or the policy of the Federal Farm Board, so that, despite the "blurb's" promise, we are left in the dark as to the author's views upon a vitally important question involving the relationship of the individual producer to the State and the problem of sustaining artificially internal prices for certain commodities. Writing, as he did, in 1929, he was perhaps wise to decline the rôle of prophet, but he might consistently have retained that of narrator.

While most of the other claims above are doubtless substantiated in the eyes of American readers, it is disappointing to those situated upon this side of the Atlantic to find that Professor Comish has confined himself exclusively to a description of American conditions. If he had drawn upon other countries for at least some of his historical examples it would have added greatly to the value of his contribution to the study of a particular branch of agricultural economics. Again, the total exclusion of reference to contemporaneous happenings in Europe (not suggested by the title of the book) is unfortunate from the standpoint of the American student. A noteworthy example of this shortcoming is provided by the section entitled "Co-operative Grain Associations," where even the sub-section "Grain Pools" contains no mention of Canada. We read that, although "to sign up the farmers quickly and effectively is a problem . . ." nevertheless "speeches outlining orderly marketing and higher

prices having been delivered . . . evangelists, influential farmers and organisers should then secure signatures on the dotted line." Mr. Comish holds, however, that promoters of American pools "promised too much and chattered too much about orderly marketing," and agrees that control of 3 per cent. of a crop cannot influence price. Here Canadian procedure and experience might surely have been quoted with advantage: Canadian comment on these particular pages would also be valuable to English readers. In a discussion upon compulsory *versus* voluntary pooling, the writer makes it clear that, ultimately, he favours the former.

Within its limits the work has considerable merit, for it presents very fairly the difficulties met with as well as the advantages to be derived from the application of co-operative principles to agriculture; its author is orthodox in his advocacy of the single commodity basis and in stressing the variability of marketing costs, while he might be treating of Western conditions when explaining the principles of representation best suited to co-operative societies. The series of questions appended to each chapter savour much of the students' text-book, but a too attenuated bibliography of "foreign" works dealing with the subject that ignores the Horace Plunkett Foundation's publications, dates Fay's "Co-operation at Home and Abroad" as 1920, and describes the joint-author of "Co-operation in Denmark" as "O'Brion," may cause some inconvenience and misconception to that class of reader.

J. A. VENN

Die Drei Nationalökonomien. By PROF. WERNER SOMBART. (Munich and Leipzig: Duncker and Humblot, 1930. Pp. xii + 352.)

SOMBART'S latest book is a magnificent footnote to his great work on Modern Capitalism. Readers of his *Magnum Opus* will find here Sombart's conception of the scope of Political Economy, which in his opinion differs from the current theories. There are those who look upon Economics as a normative science, in which ethical standards play a significant part; according to those who hold this view, Economics is concerned not with what is but with what ought to be. This attitude, which makes Economics a branch of metaphysics, is a characteristic not only of the scholastic writers of the Middle Ages, but also of the nineteenth-century Romantics, from Adam Müller (1779–1829) to Othmar Spann, whose *Fundament der Volkswirtschaftslehre* reached its fifth

edition in 1929, and for whom the doctrine of "just price" is a reality to-day. Sombart includes the Socialist economists in his first category—Robert Owen no less than Franz Oppenheimer—and quotes effectively Schmoller's dictum that not a single nail is hammered into the wall without ethics. Sombart has more than one shrewd thrust at this particular conception of the scope of Political Economy, and incidentally the reader will find many a valuable judgment on some of the foremost German Economists of repute.

The Normative Economists are not alone in having to face Sombart's criticism. Their colleagues who look upon Economics as a positive science will likewise have to meet his arguments. Sombart traces the growth of Natural Science in Europe and its influence on economic thought. He makes some pertinent reflections on Economic Laws, which in his opinion are entirely fictitious. As enunciated by the classical economists, these "Laws" are too much hedged about by "ifs" and "buts" and "other things being equal." Gresham's Law is a fiction no less than Marshall's Law of Substitution. There can be no real economic law because each set of economic circumstances must of necessity differ. The theory of marginal value, for example, is one thing when applied to a horse market in Eastern Galicia and quite another when considered in relation to dealings in securities on the London Stock Exchange. Your "economic man," as Mill described him, is conceivable only in a certain stage of capitalist development. Sombart has no patience with those who desire to apply scientific method to Economics.

Having given his reasons for rejecting the conception of Political Economy both as a body of doctrine which passes judgment, and a system of thought which attempts to establish rules and laws, Sombart proceeds to set forth his own view. His is "Comprehending" Economics. The term sounds a little strange even in the German original (*die verstehende Nationalökonomie*), but then it is the suggestion of a pioneer who believes that in future the conception of economics and of economic activities, if it is to become useful and effective, must break away from the position it has occupied during the last 150 years. Sombart is at pains to make clear what he understands by "Comprehension," and psychologists will find abundant material for comment in the third and larger portion of the book. But whether his thesis finds acceptance or not, readers will perceive that Sombart's hand has lost none of its skill. The book abounds in attractive ideas; the style sparkles; and students will find it

not only stimulating, but also full of valuable information on the present position of the controversy in regard to the scope of Economics. Not least valuable are Sombart's reflections on the purpose of knowledge in general and of Economic Knowledge in particular. M. EPSTEIN

Newspaper Finance Annual, 1930. Edited by R. HOPKINS. (London General Press: Pp. 130. 10*s.* 6*d.*)

THIS useful publication includes an account of the recent phases of competition in the newspaper world, and their effects on share values. There is added a concise statement of the six main "groups," with their publications, directors and financial positions. The same details are given for other newspaper companies, and a directory of directors is appended. This is a model which might usefully be copied for some other industries.

A Select Bibliography of Modern Economic Theory, 1870–1929. Compiled by H. E. BATSON. (Routledge: Pp. 220. 7*s.* 6*d.*)

THIS is a compilation of the work which has been done in economic theory in recent times in all countries. It does not attempt to cover economic history or descriptive economics; and, even in the field of theory, it has been necessary to exclude money and banking. In the first part, select bibliographies are given under the main headings, each work being explained, and related to other work, with a critical commentary, which is evidently the result of careful labour. In the second part, the tabulation is by authors, and includes a detailed list of contributions of all kinds, including reviews. In a foreword, Professor Robbins explains the purpose and origin of the book, and it will be agreed that the purpose has been fulfilled by Mr. Batson with remarkable completeness and erudition.

The Economic Life of the Ancient World. By JULES TOUTAIN. English version. (London: Kegan Paul. 1930. 16*s.* net.)

HERE we have a volume of a notable French series of works dealing with the History of Civilisation, mostly by French authors. Each volume is a book by itself, written by a scholar of repute speaking for himself; but the general editor contributes a "foreword" to each treatise. In the present case this preface is an important introduction to the narrative of M. Toutain, who shows a marked anxiety to avoid wide general conclusions. That such conclusions do nevertheless emerge now and then, is pointed out

by the Editor. But the steady caution that inspires the "historical" method of the author is a quality that will impress a reader from first to last.

Treated chronologically under several periods, the narrative ranges from the early days of Greece down to the economic collapse of the Roman Empire. Each period is dealt with under three main subdivisions—land, its tenure and produce as the primary stay of life and source of wealth; "industry," by which is meant the production of articles other than natural fruits by the skill of men; and exchange in its various forms and degrees, from primitive barter to the full developments of commerce by land and sea. All these topics are clearly and instructively discussed. If there is nothing particularly new in the story, the economist student may be thankful to have so much interesting material carefully set out in a comprehensive view. He will meet many old friends, such as the effect of the invention of coined money and of the subdivision of labour; but he will note with approval the great stress laid by the author on two moments of exceptional economic significance. These were, the immense expansion of trade and commerce that followed the conquests of Alexander, and the unification of the Mediterranean world under the supremacy of Rome. Of these, the former not only multiplied the economic relations of East and West; the contact of Rome with the great Hellenistic kingdoms introduced new notions as to the relations of a State to its territories, and profoundly influenced Roman policy in the Provinces [pp. 109 foll.]. The latter promoted maritime trading under the shelter of the Roman Peace, and led to a period of general prosperity lasting for some 200 years.

And so the careful narrative flows on in its parts and sections, each adding to a stream that starts with the primitive needs of Homeric and Hesiodic society and ends with the "infinite main" of the Roman catastrophe, the economic downfall of the ancient world. The general effect is that of a series of pictures skilfully drawn and soberly coloured. A reader may well feel that he is travelling through many ages in good company. But the modern student of economic history is hungry for results that can be expressed in tables of figures and curves of rise and fall. Now the evidence available for such treatment of the ancient world does not suffice for a narrative statistical rather than pictorial. We must squeeze the few figures that chance has capricously left us, and make what we can of these occasional relics. It is not M. Toutain's fault that the standards of modern economic history are

not attainable in the case of antiquity. Even in the population question the estimates of competent scholars differ widely.

But on one point there is nowadays a general agreement—that the course of events in any period of human history cannot be fruitfully studied or recounted without a watchful attention to the economic side of the story. Economic facts, like other facts, may be viewed as either cause or effect, as an earnest of the sequel or a record of the past. But their active significance must depend on their sure and exact interpretation. If official and technical evidence is incomplete and scanty, while the voice of contemporary literature is mostly partisan and rhetorical, loose and tentative conclusions can hardly be avoided. Yet this unsatisfactory condition prevails in the history of the ancient world, with which this book is concerned: more particularly in the part dealing with the Roman Empire. Legislation more and more becomes Imperial decree, so far a simple fact; but what were the exact motives of this or that ordinance, how far it was ever carried out in practice, and with what results, is often very doubtful. The cases of Domitian, Pertinax, Aurelian, Diocletian, not to mention the system of *alimenta*, are illustrations of this uncertainty in the sphere of economic history. We are, in short, very seldom if ever in a position to trace definite consequences as resulting from definite acts. We can by the way of cautious interpretation, ever awake to the defects of the evidence, detect with reasonable assurance the tendencies at work; to account for such tendencies is a much more risky undertaking.

Now it is true, as the Editor has pointed out, that out of so wide-ranging an inquiry as this book presents some large general conclusions must arise. Particular details may call for particular question, but this is mainly in connexion with the particular treatises which serve as documents to M. Toutain. The facts of "economic life" as set out under four great periods must leave on the reader's mind a deep impression. He has to follow a long course of development in which production becomes more and more technical, labour more and more subdivided and specialised. Meanwhile, the release of accumulated capital and its greater mobility attend and promote active economic growth in the world shaken up by Alexander. The checks on this progress, due to hostile relations of states and maritime piracy, are at length removed by the Mediterranean supremacy of Rome, and it seems that nothing is left to menace the continued union of prosperity and peace. On the face of it, a reader unaware of the historic sequel might reasonably expect the great Empire to be steadily adding to its resources, especially in the way of economic strength.

If the *pax Romana* was indeed the boasted universal boon described by poets and rhetoricians, ought it not to bear fruit in improvement of social and political relations all through the Empire, a matured patriotism, a cohesion organic and solid, an assured solvency guaranteeing the power of Rome to protect her subjects at whatever cost? Was not Rome, heir to all the past achievements, intellectual, moral, economic, of peoples now under her control, far better equipped than outer barbarians to profit by a recovery of health in a well-used period of rest?

And yet we know that such reinvigoration of the great imperial body never took place. Rallies and revivals did now and then prove that Rome could, by straining her resources to the utmost, beat back and chastise her enemies. But the efforts of purely military force are not in themselves restorative; unless followed by a sound convalescence within, the conquering power is apt to find them exhausting. Now the ever-present financial needs of the Empire, the growing food-problem, the reversion to payments in kind, not to mention the debasement of currency and the mad attempt to fix prices, are alone enough to show that no real recovery of vital power was attained. So we come to the "economic downfall of the ancient world," the subject of M. Toutain's concluding chapter. In it he gives a skilful summary of the manifold evils, external and internal, under the pressure of which the Empire declined and fell, and the fruits of Greco-Roman civilisation were lost in a relapse to earlier and crude economy. Nor will any serious reader take exception to the enumeration of these evils as causes of the decay of trade and enterprise, leading to stagnation and bankruptcy. But I ask myself, Is this all? I cannot quite dismiss an uneasy feeling that a further consideration remains, on which I should have been very glad to have before me the express judgment of so competent a scholar.

After referring (p. 323) to the causes of the prosperity of the Empire described in preceding chapters, he remarks that even in the early days of the Empire "the economic picture had its dark patches." He instances the deplorable condition of Greece and the evil plight of agriculture in many parts of Italy, and adds, "Even before the end of the second century symptoms of decay were appearing. Things grew rapidly worse in the third century." These admissions he justifies by a general review of this third-century worsening. Invasions, insurrections, wars of pretenders, pestilence and famine, everywhere insecurity ruinous to town and country alike, taxation unable to extract the needed revenues from wealth that was vanishing—all these, combined

with the loss of moral unity due to the persecution of the Christian religion, make up an impressive tale. But it is surely fair to remark that these items in the story of disaster must be regarded for the most part as effects not less than as causes. In particular, those of direct economic bearing; for was not the later universal compulsion-system, the despotic regulation of labour and trade, a frantic attempt on the part of the Government to provide for its financial needs? It went on from bad to worse, seeing no other way to meet its necessities. In other words, it recognised that existing means of production had broken down. But these means were the result of a system developed in the course of centuries by many peoples and absorbed with them in the great imperial unit of Rome. This absorption is often treated as a sort of ecumenical boon, and M. Toutain seems contented to accept this opinion. With all respect and gratitude to the author of so interesting and instructive a work as the present, I cannot but confess that my own studies lead me to a different view.

This is not the place for a full statement of the grounds on which my conclusions are based, but I feel bound to say here that the municipal structure of the Empire as left by Augustus appears to me a political makeshift of the same pattern as the rest of his acts. To blame the great Founder for inability to transcend the somewhat narrow bounds of Roman precedent would be absurd. But the policy of extending the system of urban communities, enjoying powers of local self-government, to all parts of the empire, carried on by his successors, was a momentous step. Gradually the Roman world was made into an aggregate of *civitates*, each with its territory ruled from the town. Upon these local units, whether created by Rome or (as mostly in the East) adaptations of former cities, there rested the common stamp of Roman constitutional tradition. Effective power was reserved to burgesses of means, but offices were elective; thus the gratification of ambitions depended on the favour of a plebeian mass, which in some of the greater cities was a mongrel rabble. That one of the chief preoccupations of local magnates was to gratify the mob by providing comforts and amusements, feasts, doles, at their own expense, is clear from surviving inscriptions. In short, the very institutions and usages that had brought the later Republic to a disastrous end in the corruption of Rome itself were planted out in her subject countries to bear fruit in the Empire. That this was eventually a political misfortune, I am convinced. But that it was from the first also a source of economic weakness seems to me beyond a doubt. The wasteful unproductive expenditure

in Rome had been bad enough. To set up hundreds—nay, thousands of municipalities, so organised as to provoke imitation of the fashions and foibles of the capital city, was surely worse. Surely the Roman Empire was not an industrial, but an imperial, colossus. It is, I fear, a misleading practice, but not a rare one, to compute the size of the Empire on one scale and its commerce on another. The existence of a few great commercial centres is liable to make us forget the vast number of cities jealous of each other's privileges, competing with their neighbours in extravagant display, all depending on the central government for the security that alone made such misuse of their resources possible. But it was this unthrifty and sometimes corrupt mismanagement that first gave Emperors occasion to interfere with the local governments, being themselves chronically in need of money and interested in the solvency of tax-paying subjects. How this intervention led on to the general despotic control and deadly stagnation of the later Empire is notorious. But when historians point out that all forms of production withered under the blight of universal compulsion, I cannot refrain from asking whether this failure was simply the result of systematic Imperial tyranny. Was it not largely due to a well-meant but unsound policy of multiplying isolated municipal units on a model of proved tendency to pamper the idle and to value the industrious by only such standards as a slave-holding civilisation can use? I am not suggesting that all or most of these municipalities were scandalously corrupt, but that their economic strength was really not so great as modern historians sometimes assert and almost always imply. I suggest that this weakness was not a phenomenon due to the disasters of the third century, though aggravated past remedy by the events of that period; but rather a characteristic inherent in their condition from the time of the Republic. That they needed restraint and correction in matters of local government is shown by the evidence of jurists and writers of the second century. It is, I hold, not well to take no notice of an institution spread all over the Empire and to attempt no estimate of its tendency as bearing on economic life for good or for evil. True, this tendency may be described as an influence (may I call it *moral?*) acting directly on human character and conduct rather than on economic life. But I think M. Toutain would agree that the economic efficiency of a community depends in no small degree on the moral atmosphere in which its members live and move and have their being.

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Cambridge.

The Economic Aspects of the History of the Civilization of Japan. 3 vols. By YOSOBURO TAKEKOSHI. (Allen and Unwin.)

THE author of this work, in telling how he came to write it, declares that a certain Mr. Asabuki "felt distressed at the fact that there was nothing but records of wars and conspiracies in Japanese history, and, eager to see a history viewed from the point of the economic development of the nation, he urged me to write one."

Mr. Takekoshi ranks, indeed, as the chief pioneer of the economic interpretation of history in Japan. This book in English, which is largely a paraphrase of a work written by the same author in Japanese, might well have been called simply "An Economic History of Japan" instead of the rather cumbrous title it actually bears. It traces in detail and with abundant documentation, much of which is entirely new material for non-Japanese scholarship, the growth of economic institutions and ideas up to the time of the recent "westernisation." The first volume carries the survey from the earliest historic period to the death of Tokugawa Iyeyasu in 1616; the second and third continue the record to the fall of the Tokugawa shogunate and the Imperial restoration in 1868.

Perhaps the most valuable part of the book, and certainly the most original and generally interesting, is the account given of the rise of the mercantile class in the Ashikaga epoch, of the *za* alliance, which Takekoshi calls an "internal Hanseatic league," and of the Japanese free cities, of which Sakai was the most important. This side of Japanese history has hitherto been very much neglected; such a notable authority as Murdoch, in his *History of Japan*, takes hardly any notice of it. There is a widespread impression that the whole politico-economic development of Japan is summed up under the heading of feudalism, and that nothing resembling urban autonomy has ever existed in the East. A study of the evidence submitted in this book should go far to modify such an opinion. The misapprehension has arisen largely because the conditions prevailing under the Tokugawa shogunate, which persisted into the latter half of the nineteenth century, and could therefore be observed at close quarters by European historians and publicists of that time, have been too readily taken as representative of the earlier periods. But actually the Tokugawa epoch was in many ways quite unlike that of the Ashikaga which preceded it. The former was a period of the concentration, the latter of the diffusion of political power. And amid the feudal

particularism of the Ashikaga age a mercantile class grew to strength and organised itself, especially in those districts which were bases for trade or piracy in Chinese waters. This phase of Japanese history shows, therefore, parallels to European mediæval history in its urban life as well as in feudalism. The Japanese *za* presents close analogies to the *hansa*, and the history of Sakai might in outline be that of a typical French commune. From the close of the sixteenth century, however, increasing centralisation and bureaucratic control suppressed the liberties of the towns, and although the bourgeois under the Tokugawa continually enriched himself, to the impoverishment of the feudal nobles and their *samurai*, he became politically negligible and was socially humiliated in every way.

A good account is given of foreign trade at all periods; especially satisfactory is the study of Nagasaki and its monopoly during the period of isolation. Two very interesting chapters deal respectively with the Japanese corsairs and with the trading settlements and "colonial" adventures of the sixteenth century. Of the breed of sea-rovers who so nearly diverted the course of Japanese history Takekoshi says, with his characteristic simplicity of English style: "What they were after was fortune, and thinking the most likely place to find it was in foreign countries, they ventured on the sea, and moved about from place to place, just as it is a natural instinct to seek a warm place in winter and a cool place in summer."

The historical problems of currency in Japan are ably handled and are brought into relation with those of foreign trade. Takekoshi combats the view that Japanese gold specie was taken away in great quantities in the early days of commerce with European countries, and he refutes the belief that the price of gold in Japan at that time was low, quoting in his favour the report made by Saris and the British clerks at Hirado about 1610. Japan absorbed great quantities of gold from China and Indo-China, and China took copper and silver from Japan. Copper, indeed, was then Japan's principal export, as it was again during the Meiji era. "It may not be too much to say," says Takekoshi, "that it was copper which saved Japan during the Toyotomi and Tokugawa regimes."

Mr. Takekoshi is at his best on questions of currency and commerce, but there is much of interest and value also in his account of agriculture and land-tenure. In his treatment of feudalism, however, he regularly speaks of the *sho* as a manor, whereas Dr. Asakawa in his recently published *Documents of Iriki*

has given good reasons for rejecting the identification. And it must be admitted that the use of the English term tends to obscure the peculiarities of the Japanese land economy, which was based on an intensive rice cultivation without pasture.

G. F. HUDSON

All Souls College,
Oxford.

Ἱστορία τῆς Ἑλληνικῆς Δημοσίας Οἰκονομίας. By A. M. ANDREADES. (Athens: D. N. Tzakas, S. Delagrammatikas and Co. Vol. I, 1928, Pp. xvi + 563; Vol. II, Part i, 1930, Pp. 104.)

PROFESSOR ANDREADES needs no introduction to the readers of this JOURNAL. His *History of the Bank of England from 1640 to 1903*, which appeared in an English translation in 1909, achieved so marked a success that a second English edition was called for in 1924, and his numerous books and articles in French, covering a wide variety of subjects and ranging from the Homeric period down to these post-war days, are known and valued in circles to which his still more numerous works in Greek are a closed book. The publication, therefore, of the opening instalments of the author's *magnum opus*, which will assuredly further increase his reputation, is an event which must not be allowed to pass without notice and welcome here.

The work now inaugurated is to form the first section of a projected *System of Greek Public Economy*. This will ultimately consist of three sections, dealing respectively with (*a*) the history of Greek Public Economy from the heroic age down to the nineteenth century of our era, (*b*) the Greek Public Debt, and (*c*) Greek taxation. Side by side with this it is proposed to publish a *Handbook of Political Economy*, which will deal with economic theory, following the lines of the Professor's lectures on this subject. Strictly speaking, we have before us the beginning of a second edition of the author's work under the same title which was completed in 1914 and published in 1918; but, though its character and aim remain unchanged, it has been so considerably enlarged and so completely recast as to become to all intents and purposes a new work. The first volume embraces the period which ends with the loss of Greek independence on the battlefield of Chæronea, while the second is to comprise the Hellenistic or Greco-Macedonian period; the section of it which has already appeared deals with the reign of Alexander the Great.

The work is, in the author's own words, " destined primarily

for students of the economic and social sciences" (p. x; cf. 258) rather than for archæologists or ancient historians, and is an attempt to write a history of finance (Finanzgeschichte) rather than a general economic history (Wirtschaftsgeschichte). This purpose, which determines the whole scope of the work and the arrangement of the material, serves to differentiate it from other recent works dealing with the economic aspect of the ancient world, such as Glotz's admirable *Ancient Greece at Work* or Toutain's *Economic Life of the Ancient World*. It also helps to account for the fact that the discussion of Athenian finance is practically limited to that of the Periclean period and the decades which followed down to the triumph of Macedon, "that is, to the times in which what is to-day termed 'social finance' was applied" (p. 258). To the archæologist this restriction will appear as a serious loss, but he must admit the author's contention, that it is not till we reach the full development of democratic Athens that its finance "presents an interest for the public economy of the present day."

The arrangement of the work leaves nothing to be desired in the matter of lucidity and order, and the full analytical tables which preface the volumes render possible an easy and rapid survey of their contents: in the case of the second volume, this task is facilitated for most foreign readers by the addition of a French table of contents. The Preface of Volume I is followed by four "Books," which deal respectively with the Homeric world, the Spartan state, the Greek world of the classical period, and Athens. In view of the interest of Athenian finance and the abundance of the materials—literary, epigraphical, numismatic and archæological—available for its study, it is hardly surprising to find that the fourth Book outweighs in bulk the preceding three taken together. Throughout the work are scattered a number of interesting excursuses and appendices, such as those on Minoan finance (38–9), on temple finance (237–40), on Aristotle's *Oeconomica* (98–103) and on Xenophon's *Vectigalia* (488–500): especially noteworthy are the two long excursuses which close the present fascicule of Volume II, that on the more important financial personalities of Alexander's reign (75–94) and that on the revenues and financial policy of Lysimachus (94–104). The volume ends with three full indexes—of financial and economic terms, of ancient personal names and of modern writers cited in the book—which greatly enhance its value.

It is not expected that everyone will agree with all of Professor Andréadès' judgments in a field where evidence is some-

times lacking, often scanty and not infrequently ambiguous or even contradictory. But the reader will find himself stimulated even when he is not wholly convinced, and he will carry away from the study of this work at least three impressions. First, that of the author's clarity both in arrangement and in expression. Second, that of his tireless energy and industry in seeking out all the relevant materials, alike in the ancient sources and in modern discussions. Third, that of his fairness and honesty; he does not approach the evidence with a preconceived view for which he seeks confirmation, but attempts by careful and unprejudiced examination to understand its true significance and value. We welcome, therefore, the work already accomplished and hope for the successful achievement of the author's ambitious project.

MARCUS N. TOD

Oriel College,
Oxford.

The Assignats. By S. E. HARRIS, Lecturer on Economics, Harvard University. (Harvard University Press and Humphrey Milford. Pp. xix + 293. 15*s.* net.)

THIS book, which forms Vol. XXXIII in Harvard Economic Studies, was completed as a Doctorate thesis in 1926 and was awarded the David A. Wells prize for the year 1926–7. It takes, in a great measure, almost the form of a commentary on previous writers on the currency problems of the French Revolution, especially Marion, Falkner, and Hawtrey, and unless the reader carries in his mind a fair knowledge of the economic events of that period and of the controversies arising thereout he will find it a somewhat difficult matter to follow Dr. Harris's theme. This is unfortunate, because the very considerable research which the author has undertaken—the bibliography appended covers fourteen pages—and the new facts which he has set out regarding many obscure aspects of his subject are apt to be overlooked. Some of the troubles of the ordinary student (as apart from the specialist) may be removed by the reading of Chapters VII and VIII after the first chapter, before reading the book through. The general idea of the origin of the assignats and the causes leading to their depreciation will thus prepare the reader for the more detailed study of revolutionary finance, land and the assignat, local depreciation, and foreign exchanges, on all of which Dr. Harris has done much praiseworthy work.

On the eve of the Revolution about 2200 million livres of coin

were in existence, but from a fourth to a third was hoarded. Industry and agriculture suffered from lack of capital, and political and economic conditions were unsettled. At the close of 1789 the issue took place of non-interest-bearing assignats, based on the sale of Crown and Church lands. The objections to a currency of this kind are obvious, but the continued confidence of the people in land as a security—if not that a particular assignat related to a particular piece of land—maintained the value of the new paper for a time. Land sales, in fact, absorbed large quantities of assignats in the first three years of their existence. The hoarding of commodities through the fear of war brought the beginning of depreciation, and the shortage of food supplies and of other commodities accelerated the downfall. The Terror introduced maximum prices and rationing, and though all this time the issue of assignats continued, supported by confiscation of the lands of royalists, there was an appreciation of the paper money in 1793–4. Dr. Harris holds that this appreciation was apparent only, for large quantities of assignats had to be hoarded, since "the Government not only decided how many assignats should be spent for all necessary and semi-necessary commodities, but practically decided how much was to be expended on any particular commodity." After the downfall of Robespierre the economic policies enforced by him disappeared. Prices once more bounded up, and, "as the Treasury attempted to recoup itself for losses caused by depreciation by creating more money, depreciation proceeded even more rapidly." In fact, the situation in France in 1794–5 presented phenomena not dissimilar from those we have witnessed in Germany during the recent period of inflation, and in both countries unlimited issues of paper money ended in that money having no value. But Dr. Harris rightly points out that it was not the mere quantity of money that was the sole cause of the depreciation. The shortage of goods and the imperative need for subsistence forced the offer of assignats in order to obtain that of which there was not enough. "Subsistence, supplies, security, taxation, and the other factors at work, all finally affect the value of money through changes in the quantity of paper money thrown on the market or any other variables in the equation of exchange. Quantities issued are of little significance without a consideration of the varying haste with which they are disbursed."

HENRY W. MACROSTY

Anglo-Irish Trade in the Sixteenth Century. By A. K. LONGFIELD. (Routledge. 12*s.* 6*d.*)

VERY little is known about the economic condition of Ireland in the sixteenth century. There is an almost complete absence of original documentary sources owing to the destruction that has overtaken the Irish records, and the material that has escaped destruction deals with political rather than economic affairs. There is no good general description of the country at the time; economic conditions are either taken for granted or deemed of no importance by the Irish bardic poets, and the information to be gathered in State papers, Corporation records and other official sources is meagre in the extreme. The well-known descriptions of Ireland by Spenser, Moryson, Davies and other writers belong to a later date, when the conditions of the seventeenth century had replaced those of the sixteenth. The obscurity in which the period is enveloped has been partly relieved by Miss Longfield's interesting monograph, which throws a flood of light upon one aspect of Irish economic life. The scope of the study is necessarily limited. The importance of Anglo-Irish trade in the general economic activity of Ireland was considerably less than it is to-day, because the greater part of Irish external trade at that time was with France and Spain. The trade with England was, however, gaining at the expense of the French and Spanish trade during the period in question, as is shown by the decay of the towns in the south and west and the development of the new ports on the east coast, which depended altogether on cross-Channel trade. This change in the orientation of Irish commercial life probably indicated a decline in the prosperity of the old Irish and Anglo-Norman elements in the community.

The study is based largely upon material derived from the English Customs Accounts and Port Books. No exact quantitative estimates are possible of the volume of Anglo-Irish trade as a whole. It would appear, however, that the balance of trade was favourable to Ireland. The principal exports from Ireland were fish, timber, glass, beef, pork and cattle. The importance of the fishing industry tended to decline during the century, while that of the provision and live meat trade tended to increase. The export of timber was an unhealthy sign of the wasteful destruction of the Irish woods. In the early part of the century, corn, hawks, hounds and horses figured among the exports, but these articles appeared less frequently in the export list in later years. The imports consisted principally of manufactured goods,

salt, coal and iron. An increase in the Irish brewing industry is suggested by the growing importation of malt and hops towards the end of the century.

The increase in the share of Irish trade conducted with England during this period was a portent of the new colonial status which Ireland was doomed to occupy for the next two hundred years. In the Middle Ages Ireland had enjoyed unrestricted freedom of commerce with foreign countries. That full use was made of this liberty is shown by the fact that the Irish coast-line was far better known to foreign than to English cartographers. The seventeenth and eighteenth centuries were the period of commercial repression, when Ireland was attacked with all the weapons known to the mercantile system without possessing the power of retaliation. The sixteenth century was a period of transition. Actual restraints on trade had not yet been attempted, but the old foreign trade was breaking down and the desire for exploitation was becoming the keynote of English policy towards Ireland. The actual economic grievances most complained of during the sixteenth century were the excessive granting of licences to export wool, the debasement of the currency, and the exactions of the army which was quartered on the farmers. The country-side was time and again laid waste by war, accompanied by the destruction of farm implements, livestock and crops. Ireland entered upon the seventeenth century in a thoroughly debilitated condition.

Miss Longfield has made admirable use of the material at her disposal. The book is well documented and contains a good bibliography, and an excellent reproduction of Baptista Boazio's Map of Ireland about 1578, which is preserved in Trinity College, Dublin.

GEORGE O'BRIEN

Trinity College,
Dublin.

An Economic History of Europe, 1760–1930. By ARTHUR BIRNIE (Methuen. Pp. 289. 10*s.* 6*d.*)

STUDIES in English of the forces that have shaped European industrial society are so hard to come by, and the pains of making them so great, that no reviewer would wish to appraise a newcomer ungenerously. It must be confessed, however, that the legend on the cover of this volume raised anticipations that a subsequent reading of the book did not entirely fulfil. It is not merely that Mr. Birnie confines his study to Britain, France,

Belgium and Germany: even within this limited sphere the gaps are sufficient to make one feel that a less comprehensive title might well have served his purpose.

The Industrial Revolution in manufacture is dismissed in less than thirteen pages. No attempt is made to outline the process by which the new industrial technique was carried from Britain to neighbouring countries. And if the changes in agriculture, transport and commerce receive more adequate treatment, a lack of proportion is again shown in devoting the longest chapter of all to the Co-operative Movement, and another full chapter to Profit-sharing and Co-partnership, while sparing only half a dozen pages for combinations of capital, and only a few sentences for such matters as the growth of population and its urbanisation.

Mr. Birnie's method is to describe some aspect of economic life first in Britain, then in France, and then in Germany; and he shows skill in bringing out what is common or universal. Occasionally, however, he fails, as when a paragraph on the assignats is juxtaposed with one on the Suspension of Cash Payments of 1797, without any suggestion of a necessary connection: just as though Dr. Cannan and Mr. Hawtrey had never given their minds to the subject, the inflation of British currency during the French Wars is explained solely in terms of a panic born of the rumour of a French invasion. Incidentally, the statement in the same chapter that deflation was "tested" for a short period in 1921 but was "quickly abandoned," argues an inadequate appreciation of recent currency history.

It is when dealing with labour movements and social legislation that the author's sympathies are evidently most closely engaged. To the making of these chapters has gone much honest work, and the summary of the Factory and Poor Laws, in particular, is admirably done. The later—and larger—section of the book concerned with such matters should, indeed, serve as a valuable introduction for those who take more than an insular view of social economics, and who wish to know something of Continental solutions for problems closely related to our own.

Throughout, Mr. Birnie is at pains to simplify the task of his readers; no errors of fact have been detected; and the solitary misprint—"Siberia," where clearly "Silesia" is intended on p. 157—is of small account.

T. S. ASHTON

The University,
Manchester.

Economic Causes of the Reformation in England. By OSCAR ALBERT MARTI, Ph.D. (London: Macmillan & Co., Ltd. 1929. Pp. xxi + 254. 10*s.* 6*d.*)

THE title of Professor Marti's book is not altogether free from the reproach of begging the question, since the object of his argument is to prove that the root causes of the Reformation in this country were economic rather than religious. Other motives, no doubt, were at work, but the main motive was mercenary, even when it masqueraded under the cloak of patriotism. The roots of the Reformation reached deep down into a subsoil of money matters. Money was urgently required for national defence, was passionately coveted for private purposes, and it was to be had for the taking. The temptation was too great to be resisted.

Professor Marti describes the increasing wealth and growing corruption of the English clergy, the monstrous exactions and interference of the Pope, and the bitterness of the national feeling aroused thereby. He traces the various phases of Lollard activity, and correlates the religious movements of three centuries first with the economic progress of the nation, the rise of the towns, the growth of commerce and industry, and the emergence of a middle class, and later with the growth of nationalism and the increased centralisation of Government under the Tudor monarchy. For students of history in this country there is nothing very new in the narrative, and if it be read side by side with Mr. Tawney's *Religion and the Rise of Capitalism*, the style appears somewhat dry and the argument uninspired. It is perhaps not much safer to dispute about motives than about tastes, but at any rate Professor Marti has made a clear case and presented it in readable and interesting form.

H. REYNARD

A History of Clare, Suffolk. By GLADYS A. THORNTON. (Cambridge: W. Heffer & Sons, Ltd. 1928. Pp. xxii + 244. 15*s.*)

THIS interesting history of an English country town is written with the greatest care. All possible sources of information have been examined, and every statement is supported by reference in footnotes to authorities. At the same time the book will appeal to the general reader who cares for local history, both by its description of the stages in the life of the town and by its vivid details, such as the list in a weaver's will of his possessions, or the Cries of Clare Market, which "include anything from a warming-

pan to a tobacco-box, or from a runaway apprentice to an erring wife."

Miss Thornton discusses the development of the borough, the history of the town and the manor, and, lastly, the Suffolk cloth industry, with special reference to Clare. In five appendices she gives the entry in Domesday Book for Clare Manor, the list of bailiffs, constables and ale-tasters for Clare borough from 1273 to 1832, a summary of the conveyances of the Clare common pasture lands, a list of apprenticeship indentures in the woollen industry between 1627 and 1774, and a reprint of an article previously published on the Cries of Clare Market, which fall between 1612 and 1711. There are illustrations showing the town, the Castle, the Priory, the Gildhall, the parish church and the old houses, also two maps.

Clare Manor was granted by William I to Richard of Bienfaite, and his descendants remained in possession under the name of Clare. The male line became extinct with the death of Gilbert of Clare at Bannockburn and the lands passed to his sister, Elizabeth de Burgh, founder of Clare College. In 1459 they were forfeited to the Crown. They were granted by Henry VIII to his wives in succession, and finally were transferred by Queen Mary to the Duchy of Lancaster. The borough remained in the hands of the Crown; but the manor, known also as Erbury, had several different owners.

Clare, though possessing the characteristics of a borough, never ranked as one. The story of its arrested development is interesting. In the Middle Ages the relations between the town and its overlords, under whose protection it developed, were close. When the Honor, as the Clare lands were called, became a royal possession, the town was still the centre of administration; and the steward of the Honor Court also held the courts of manor and borough in the moot-hall. There was a beginning of administration by the inhabitants when Katherine of Aragon granted them all the demesne lands for ninety-nine years. The Clare wills frequently mention the " headborowes " who managed the lands " for the generall good of the whole Towne." From the books of their Verdicts in their leet, the vestry records and other sources Miss Thornton has reconstructed the life of the town and estimated the extent of its self-government.

The burgesses' first step towards freedom was obtaining the farm of the market in the fourteenth century. At this time the woollen industry had begun, though there were no great traders. References to the market and wills of weavers, fullers and shear-

men indicate the degree of their prosperity. At the end of the sixteenth century bay- and say-making was developing, and it flourished in the seventeenth. After 1714 the town prospered as an agricultural centre until the railway came.

There are many other points of interest. The gilds were religious bodies; there is no evidence of any trading functions. The first house of Austin Friars in England was founded at Clare, and its influence on the life of the town is traced. A curious fact is that the borough suffered comparatively little from the Black Death, while the Manorial Rolls give long lists of deaths of tenants. In short, the history of Clare was well worth writing, and Miss Thornton has done justice to her subject.

E. F. STEVENSON

The Wesleyan Movement in the Industrial Revolution. By W. J. WARNER, Ph.D. (Longmans. 1930. Pp. 299. 15*s*.)

THIS is an important work of the genus of Mr. Tawney's *Religion and Capitalism*. Historical learning and philosophic insight combine to produce a fresh interpretation of the relation between a religious outburst and the developing industrial society of the eighteenth century.

"The Methodist movement," write Mr. and Mrs. Hammond, "was a call not for citizens, but for saints." That the one need not have excluded the other if Wesleyanism had retained its pristine form is the central thesis of Dr. Warner's study. It is true that Wesley rejected the hypothesis of a social contract and assailed the radical reformers with weapons barbed with theology and ethics. But early Wesleyanism had its own social theory and sought ends not remote from those of the reformers by its own characteristic method of personal regeneration. If it frankly idealised the industrial virtues it also enjoined lavish giving, and the Methodists' pursuit of gain issued in an enlightened philanthropy. Unhappily for society, its moral outlook was clouded by a metaphysical doctrine of the divine origin of existing political authority; and after the death of Wesley, coinciding, as this did, with the reaction from the French Revolution, the cloud darkened. In the second generation the ethical teaching was obscured by the theological. A narrow legalism and a growing respectability drove from the body its more liberal-minded members. Wesleyanism ranged itself with the Establishment among the forces of conservatism; and, from this time, its social mission hardly

reached beyond instructing the poor to seek consolation in "the final proportions of eternal justice."

One misses in this book detailed biographies such as Miss Grubb has recently given us of the early Quakers. But, in an illuminating chapter, Dr. Warner makes a statistical survey of the social origins of Methodist leaders, which, if it exhibits the democratic character of the movement, also does much to explain the limitations of its programme. Possibly, too—though of this Dr. Warner says nothing—it may account for the depressing legacy of Wesleyanism to ecclesiastical architecture.

If the writer is far from the undiscriminating enthusiasm of the close adherent, he is equally remote from the cynicism of those who regard religious movements as mere soporifics. Full justice is done to the work of Wesleyanism in giving to the lives of humble men a new significance and in serving as a school of leadership. One could wish that Dr. Warner had widened the scope of his essay to include the other Nonconformist groups. An examination by his penetrating mind of the differences in thought and activities between Methodists and, say, Independents and Presbyterians would almost certainly yield notable results.

T. S. ASHTON

Catalogue of the Collection of English, Scottish and Irish Proclamations in the University [of London] Library. (Goldsmiths' Library of Economic Literature.) (London: University of London Press. 1928. Folio. Pp. 99.)

Catalogue of the Collection of Broadsides in the University Library. (Goldsmiths' Library of Economic Literature.) (London: University of London Press. 1930. Folio. Pp. 201 + 4.)

EVERY student of our economic history and literature in the seventeenth and eighteenth centuries will welcome these fine descriptive Catalogues. The Goldsmiths' Library is one of the economic wonders of the world, but hardly anybody seems to know it, or to use it, owing to difficulties of access which will not, it seems, be overcome till the University finds a more spacious home. These catalogues cover less than one-fiftieth of the number of items in the library. Curious, interesting and instructive as they often are in the side-lights which they throw upon their subjects, Proclamations and Broadsides (single sheets) have seldom been preserved, and the Goldsmiths' collection in this respect as in others is unique, but it can hardly be claimed that

these little papers are more than the frills of economic literature compared with the 60,000 more substantial volumes.

The Catalogues are, like the Goldsmiths' collection, chronologically arranged—a great help to research. Apart from one Proclamation of 1575 and one of 1797, the Proclamations range from 1646 to 1756 and are 429 in number. The Broadsides cover 675 entries, but there are sometimes several grouped under one entry. They run from 1641 to 1868, but 464 belong to the seventeenth and eighteenth centuries. The descriptive matter in each Catalogue is elaborate, and includes references to the British Museum and other collections in which copies of the documents are known to exist. Some of the abridgments are open to criticism. For example, a broadside of 1718, "The Humble Petition of the Mayor, Sheriffs, Justices, Aldermen and Common-Council of the City of Norwich" is remarkable for the insolence of its language. The petitioners pray that "Your Majesty may be informed by your interpreters that Norwich was before the Revolution, next to London, the most Rich and Potent City in England. It is now fallen very low. Its stuffs are such as your Royal issue might have been glad to wear if your country had afforded anything to offer in exchange for them. It would have been better for Norwich to have clothed your family there than have been blest with their company here, but your affections run only towards Hanover. Our children cry for bread, and as soon as they can speak, stutter forth curses against you and your issue, etc. Norwich wants a free unbrib'd Parliament."

Now the Catalogue description, though longer than this paraphrase, omits the exception of London and has no hint of the arrogance in the petition. There was no other country in Europe in which individuals or civic authorities would in 1718 have dared to address their Sovereign in language so insulting, or would have escaped condign punishment for printing such a paper. Nothing could illustrate more strikingly the change from Tudor and Stuart times to the post-Revolution period so far as licence of speech and writing are concerned. But the Catalogue does not disclose it. The quotation "now we are most Poor, our Wives are most pregnant," recalling to some of us Adam Smith's reference to the fecundity of the "half-starved Highland woman," might have been spared to make room for mention of the tone of the broadside.

A few omissions from the collection are probably due to the fact that some items bound and shelved with the books have been overlooked. But the most serious omission remains to be mentioned.

The collection, as is well known, was made by Professor Foxwell. The skill, energy and enterprise which he displayed over a long period of years, and the valuable annotations with which he enriched the documents have made the Catalogues possible. The dating of many of the broadsides in particular must have cost him a very heavy amount of research in the Journals of both Houses of Parliament and in following up internal evidence. A well-merited tribute is paid to the library assistants for their part in preparing the Catalogues, but the principal actor, whose notes are used and whose lifetime of erudite labour the collection embodies, is not even mentioned. It is to be hoped that this ugly blot will not disfigure any future Catalogue, but that the munificence of the Goldsmiths' Company, who bought the collection and presented it to the University, will be coupled with the name of the great economist who made it, and to whom it is an imperishable monument.

HENRY HIGGS

Encyclopædia of the Social Sciences. Edited by E. R. A. SELIGMAN. Vol. II. (Alliance–Brigandage). (Macmillan. Pp. 696. 31*s.* 6*d.*)

THIS is the second of the fifteen volumes in which this work will be completed. As the particular interest of the first volume was in its contributions on Agriculture, so in this volume Banking is perhaps the special feature. The theory is written by O. M. W. Sprague: the early history by Julius Landmann: and modern systems by Hawtrey, Sprague, Weber and Beckhart. Mention should also be made of Viner's article on the Balance of Trade. Among the important descriptive articles are those on the growth of the Automobile Industry, and on Aviation.

Number; the Language of Science. By T. DANTZIG, Ph.D. (London: Allen and Unwin. Pp. 260. 10*s.*)

WHILE this is frankly a book on mathematics, its purpose is not the technicalities of that science, but the exposition of the meaning of a calculus, and of the origin and evolution of the use of numbers. Anyone can read it who has "the capacity for absorbing and appraising ideas." The author has succeeded in his purpose of making the theory of number a cultured and fascinating study, linked at each step with the names of those to whom new ideas came first. "In the history of culture the discovery of zero will always stand out as one of the greatest single achievements of the human race." Those who read the chapter on "The empty column," or "How zero was discovered,"

will resolve to place this refreshing and unusual book on their shelves.

The Shipping World. By JOHN A. TODD. (Pitman. Pp. 292. 7*s.* 6*d.*)

FOR half a dozen years the Liverpool School of Commerce has been experimenting in the provision of special courses for men engaged in the two chief trades of the locality—cotton and shipping. One of the experiments has consisted of a series of lectures on Shipping and Ports, each portion of the subject-matter being dealt with by a man actively engaged in these undertakings. No less than twenty-two persons contributed to the series. Mr. Todd has collected these lectures and edited them. The result is a book which has the merits and defects of its origin.

A series of lectures given in this way, whilst gaining from the specialist knowledge of each lecturer, inevitably lacks continuity. Each lecturer assumes that his predecessors either have dealt with or omitted to deal with matters related to, but not necessarily part of his particular section. In some cases this leads to omissions, in others to over-lapping. The editor has had the difficult and unenviable task of deciding where elimination should take place. On the whole he has carried out his task with success, but the reader cannot help the feeling that in many cases re-writing was essential, if a book following an ordered course was to emerge. As it is, some chapters are noticeably incomplete, but generally the missing matter is discovered in some other part of the book.

It says much for the way in which the task has been carried out, that only in one case has an error in fact been noticed. On p. 14 the Board of Trade requirements for emigrants are given as 15 clear superficial feet on passenger deck, whereas on p. 139 the following words are used, "Upper deck, 16 ft. superficial." Fifteen ft. is correct, but in both cases the requirement that the figure applies only with a minimum height of 7 ft. is omitted.

Whilst the student of shipping will find the book most useful as an elementary text-book, he must not allow himself to be misled when the authors venture to make statements about other means of transport. For instance, on p. 252 the following railway rates are quoted :—

Soap.	Liverpool to	Bletchley	35*s* delivered
	,, ,,	London	27*s.* 9*d.* collected & delivered
Groceries.	,, ,,	Hereford	34*s.* 5*d.* delivered
	,, ,,	Bristol	25*s.* 3*d.* delivered

The author of the section then goes on: "These rates must be economically wrong: either the Bletchley and Hereford figures are too high, or the London and Bristol rates are too low." A very elementary knowledge of railway economies would have saved this blunder. In the same chapter another lecturer is indicated to have said, "It is true some railway wagons, numbering probably thousands, are privately owned." Why probably? In the next edition, if the words "hundreds of" are substituted for "probably," the truth will be expressed, as for the coal trade alone the number of such wagons exceeds half a million. References to foreign canals are also misleading, since the vital facts are omitted that the capital for them is provided by the State free of charge, and even then deficiencies on maintenance and operating account regularly occur.

In spite of these blemishes, the book is a valuable addition to the literature available to the student who is starting out on a serious study of shipping.

W. T. STEPHENSON

London School of Economics.

Imperial Economic Unity. By LORD MELCHETT. (London: G. G. Harrap & Co. 1930. Pp. 194.)

WE are all, more or less, "imperialistic" in economic outlook nowadays. What exercises our minds is less the desirability of facilitating inter-Empire commerce to the utmost possible extent than the question of the ways and means of doing it. The special value of the little book of Lord Melchett and his associates consists in the fact that it surveys the question of imperial economic relations in systematic fashion. Expert readers may find little in its pages with which they are not already fairly familiar, yet even to them it will prove a useful book of reference. No one will quarrel with the statement of the object which Lord Melchett, like so many others before him, has at heart. "The aim of co-operation in an Empire unit," he writes, "must be to alter the character of imports and exports in such a degree as will ensure to the Empire increasing markets for its produce, and to Great Britain a wider field for its manufactures, without prejudicing the individual, industrial, or agricultural development of the separate parts."

In the last dozen words lies, of course, the crux of the problem. If the Empire is to be made more self-contained than it is in fact to-day, it can only be by the adoption of a general give-and-take policy, entailing concession and compromise on a large scale.

Imperial preference on the whole has hitherto been far too one-sided, and unless a fairer balance of advantage can be struck, the home country may be worse rather than better off for its extension. What is needed is a fair deal all round. At present the Dominions have a perfectly open market in this country for certain staple products of special interest to them; but the preference which they give in return is not absolute, but strictly limited. Even in the matter of Empire trade propaganda there is no fair reciprocity. Our taxpayers are spending, willy-nilly, a round million sterling a year chiefly in advertising the export products of the Dominions and Crown colonies. How much are the latter spending in return in commending to their publics the products of Great Britain? Much, little, or nothing at all? The truth is that whereas British Ministers have hitherto stupidly protested that we in this country do not approach the question of imperial preference at all from the standpoint of material interest, but solely from that of sentiment, with the Dominions the matter is viewed—and rightly viewed—as one of commercial calculation. That is not to say that sentiment is absent on their part, for it is not, but one has only to read the reports of past Imperial Conferences in order to see the prominent place taken by hard business bargaining. There is nothing wrong in that; what is wrong is that the home Governments have been too ready in the past to give something substantial for little or nothing in return.

It is to his credit that, unlike some ardent imperialists, Lord Melchett does not overlook the rightful claims of Great Britain, though he will not convince all readers, however favourable to the principle for which he contends, that the adjustment of the interests of Great Britain and those of the Dominions, where they may be found to conflict, will prove easy. It may be even more disputable whether he is on firm ground when he tells us that the alterations in the existing customs duties, or the introduction of new duties, "need not necessarily mean an increase in price to consumers." The question which consumers, who are also parliamentary electors, will be likely to ask is not whether the abandonment of the existing fiscal policy "need necessarily" add to the cost of commodities, but whether in actual fact they will do so; and experience of the operation of tariffs in other countries, not least in the British Dominions, will be likely to outweigh assurances based on pure theory and hypothesis. Lord Melchett himself would appear to have reservations on the point, for in a later page he writes: "If at this stage I am asked whether my policy involves a tax on this or that, I decline to

answer, because that is a question which can be answered only after the problem of each commodity has been investigated from every point of view." One may fairly doubt whether to hold this "wait and see" attitude upon an aspect of the question which may prove to be one of critical importance is good policy. For while it would be absurd to contend that the expediency of the policy of "imperial economic unity" can be determined by the sole criterion of its immediate effect on the cost of certain articles of common consumption, irrespective of whether higher prices might be attended by compensatory ameliorations and gains—*e.g.* extended industry and trade, with more employment for the workers and greater security for capital and a decent return upon it for the investing public—it is of the utmost moment that the electorate should be told "the truth, the whole truth, and nothing but the truth," so far as that is possible.

W. H. DAWSON

The Money Machine. By F. WHITMORE. (Pitman and Sons: Pp. 132. 5*s.*)

THIS is one of the most useful books which have been issued for the use of students of the money market. It is written with intimate knowledge, and explains down to the bottom the practice of the banks, discount and issuing houses, exchange dealers, and the bullion market. The "machine" is, as Mr. O. R. Hobson points out in a foreword, too severe a term for what really is an organism working by reactions of "thoughts and emotions, hopes and fears"; and for these Mr. Whitmore's study makes full allowance. Theory requires the understanding of practice; and others than elementary students will welcome so concise and clear a work of reference.

An Audit of America: A Summary of Recent Economic Changes in the United States. By EDWARD EYRE HUNT. (New York: McGraw-Hill Book Company. 1930. Pp. 184.)

THE two volumes upon which Edward E. Hunt's *An Audit of America* is based were published in 1929 under the title *Recent Economic Changes in the United States.* Mr. Hunt, who served as Secretary of the Committee on Recent Economic Changes of the President's Conference on Unemployment, also as editor of its two volume Report, is well qualified to undertake the difficult task of summarising the Committee's findings. He has chosen to do so in the space of a little less than two hundred pages of printed

text. As a supplement or introduction to the original report this book serves a distinct purpose, but the reader unfamiliar with the former may experience difficulty in grasping the significance of some of Mr. Hunt's comments, which are not always self-explanatory.

Close observation of the economic situation in the United States since the early part of 1929 would indicate that the problem of bringing about a condition of economic balance, with which the Committee concerned itself to some extent, involves even greater difficulties than originally surmised. The nature of the temporary remedy or remedies necessary to establish such a balance cannot be definitely determined, if at all, until the present business depression has run its course, for the changing symptoms of the ailment have not as yet been satisfactorily diagnosed.

It is to be hoped that the services of the Committee on Recent Economic Changes and of its able Secretary may again be called upon to still further widen the scope of our knowledge regarding the trends of economic development in the United States, a subject of intense interest to specialists and laymen alike.

FELIX FLUGEL

NOTES AND MEMORANDA

Progressive Taxation and Equal Sacrifice

"It will be convenient to pause for a moment before attempting a constructive argument, in order to clear away a false opinion which appears to be somewhat widely entertained. This opinion is to the effect that, in all circumstances, in order to secure equal sacrifice, the tax formula must be, in some measure, progressive. . . . This proposition is supposed to be logically deducible from the law of diminishing utility. That supposition is incorrect."[1] So writes Professor Pigou; the view which he expresses in the last sentence must be accepted. Having shown that proportional taxation would be required by the canon of equal sacrifice if the curve showing the diminishing utility of income was a rectangular hyperbola, progressive if the curve was steeper and regressive if it was flatter, he adds, "Plainly it is impossible to decide whether the income-utility curve of the members of the community (all of whom are assumed to be alike) is of this character [viz. a rectangular hyperbola] or of some other defined character by any process of general reasoning."[2] I propose in this note to suggest a process of general reasoning by which we may establish a probability in favour of the steeper curve. On a later page[3] Professor Pigou confesses that the supposition of a steeper curve is "plausible." It is proposed to contend for something more than mere plausibility.

In seeking for a standard by which to measure the utility of various ranges of income, may we not fall back on Adam Smith's "original purchase price," the effort required to obtain it? It will have been noted that Professor Pigou for purposes of the analysis assumes that the taxable members of the community are alike in respect of the utility of income to them. We might carry this similarity one stage further by supposing the xth unit of effort to have the same disutility to them all. Alternatively we may consider our investigation to be concerned with how to tax an individual as his income alters.

The utility of a man's last pound of income is equal to the

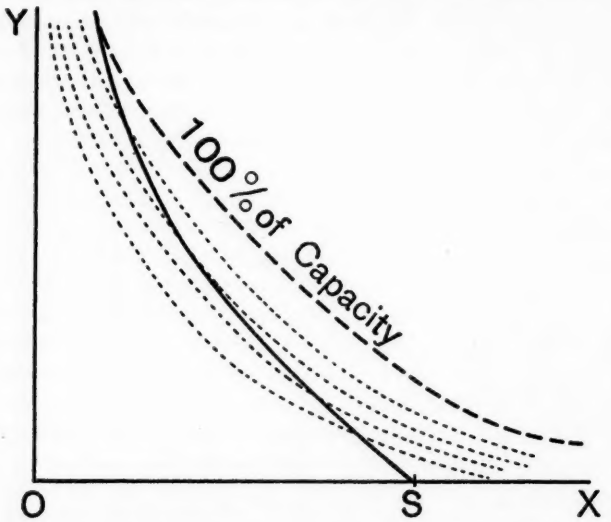
[1] Professor Pigou, *Public Finance*, p. 105.
[2] *Ibid.*, p. 110.
[3] *Ibid.*, p. 112.

disutility of the last unit of effort expended to earn that pound. Let it be supposed (i) that the whole income is derived from the reward of effort and (ii) that the recipient is at liberty to vary the amount of his effort. It will be seen that proportional taxation would be justified if it were found that a man expended the same amount of effort whatever his rate of pay. Construct a curve of which the ordinate is the effort price of income (the reciprocal of the rate of pay for work) and the abscissa the amount of income purchased with effort. If this curve is a rectangular hyperbola, the same amount of effort in the aggregate ($xy = k$) is expended in the purchase of income whatever the rate of pay. In this case we have a fixed standard for measuring the marginal utility of income, viz. the kth unit of effort. However income varies, the disutility of a unit of effort expended at the margin to obtain it is constant, since precisely k units of effort are always expended. Consequently the utility of pay per unit of effort at the margin is constant for all incomes, that is, for all rates of pay. Total income is proportional to rate of pay, since the same amount of work is always done. The marginal utility of a pound of income multiplied by the rate of pay is constant. Consequently the marginal utility of a pound multiplied by the total income is constant, and the income-utility curve is a rectangular hyperbola. The curve constructed on the above plan, which we might call the effort demand for income curve, is in this special case identical with income-utility curve; proportional taxation is required.

If the effort demand for income curve has other than unitary elasticity, it is not identical with the income-utility curve, since the marginal unit of effort expended to obtain income is not always the kth unit and we are deprived of our fixed rod for measuring income utility. Certain general relations may, however, be established. If the effort demand for income curve has for part of its course less than unitary elasticity, the last pound of income is, as income increases, pitted against units of effort of successively decreasing disutility. Consequently the marginal utility of a pound of income declines more rapidly than the effort demand for a pound. If the effort-demand curve is steeper than a rectangular hyperbola, the income-utility curve is steeper still. If the effort-demand curve is flatter than a rectangular hyperbola, the income-utility curve is by parity of reasoning flatter still. Consequently taxation should be progressive or regressive according to whether the representative man's effort demand for income is inelastic or elastic.

A man of great virtue might always work 100 per cent. of

capacity whatever his pay. His effort-demand curve would be the innermost of a family of rectangular hyperbolas, each showing willingness to work a given per cent. of capacity whatever the remuneration. The actual effort demand of a representative man impinges on that of the man of great virtue at one point at least, namely, when he is at the subsistence level. Struggling among the ice-packs of the Arctic, marooned on a desert island or exploited by a sub-contractor, a man may have to give his whole self or fail to subsist. He may, of course, give up the unequal struggle, but in that case he passes outside the purview of the tax-collector. Wages then have only to be reduced sufficiently



to bring a man on to the 100 per cent. curve. In more favourable conditions he probably soon drops away from it. As his actual curve passes down to lower percentage members of the family, it must be inelastic.

The picture can be completed if at the other end of the scale we suppose the possibility of satiety. To do so is not unreasonable if, again following Professor Pigou, we take the income-utility curve to refer to " a representative individual whose income, along with the consumable incomes of all other similar individuals, is supposed to vary." [1] This is clearly the proper procedure in considering a tax scale which is to apply similarly to all individuals. With this reservation it seems quite irrational not to suppose a

[1] Professor Pigou, *Public Finance*, p. 111.

limit to the quantity of means to secure which a man is prepared to undergo pain. Desire springs ever; but beyond a certain point it would be directed to new applications of existing means rather than to a further extension of them.

In the adjoining figure income is measured along OX and the effort price of it up OY. A family of rectangular hyperbolas is shown of which the innermost represents the constant outlay of 100 per cent. of capacity. OS represents the amount of income which gives satiety. The effort-demand curve of the representative man takes off from the 100 per cent. of capacity curve and drops finally to S. If it proceeds with regularity it will be inelastic throughout. It may, of course, have kinks and irregularities in various parts, but it must be predominantly inelastic. If this is so, the income-utility curve *a fortiori* is steeper than a rectangular hyperbola, and progressive taxation is justified by the canon of equal sacrifice.

The generalisation which this seems to imply, that the richer a man is the less work he will do, might be regarded as too sweeping.[1] The following points must, however, be remembered. 1. We are supposing the individuals to be similarly situated in their social environment. 2. We suppose similarity of temperament. 3. Work may be undertaken for other than income-getting motives, to obtain power, etc. 4. Some work is pleasant. Units of effort must be measured so as to show the same curve of increasing disutility of units of effort for similar individuals in different professions. Difficulties as to how to determine these units no doubt arise. But they need not be held to obstruct us from reaching our main conclusion.

In this argument effort demand for income has been used as a test of income utility. If the former curve is inelastic, the latter is so *a fortiori*. It was assumed that all income was derived from the reward to effort; but this assumption was only made in order to establish the general character of our test curve. The assumption is not necessary to the conclusion about income utility. If the test curve *would* be of this character in the assumed circumstances, the income-utility curve *is* of this character.

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[1] It is not inconsistent with this to suppose that a man will work harder in response to a rise in pay for a certain *section* of his total effort, or, if he enjoys an unearned income, in response to a rise in pay for all his current income-earning efforts.

OFFICIAL PAPERS

League of Nations: Interim Report of the Gold Delegation of the Financial Committee. (Geneva: 1930.)

A REPORT has just been issued by the League of Nations on the adequacy of the world's supplies of monetary gold. A special Delegation of the Financial Committee was set up over a year ago to examine the fluctuations in the purchasing power of gold and their effect on economic life. The present report summarises the conclusions reached on the particular problem which the Delegation has selected for treatment first, namely, whether the available and prospective supplies of gold are likely to prove adequate to maintain prices. It is clear from the annexes to the report that a very extensive survey of all the existing sources of information has been made.

For the purpose of estimating the monetary demand, it has been assumed that the demand for currency is dependent upon the volume of production and trade and on the monetary transactions to which such trade gives rise, and that, in the absence of any important changes in currency systems and practice, the demand for gold will be determined by the same factors. The future demand is then estimated on the hypothesis that the volume of production and of trade and the volume of notes and sight liabilities of central banks will both tend to expand at an average rate of some 2 to 3 per cent. per annum.

The general conclusion reached is that at no very distant date lack of adequate supplies of new gold for monetary purposes is likely to exercise its influence in depressing prices. The Delegation adds, however, that if the need is recognised, remedial measures can be found which should correct the consequences feared, at any rate for some time to come. A number of remedial measures that might be adopted are mentioned in the last part of the report by way of indication. Special emphasis is laid in this connection on the danger of aggravating the situation which may be caused by countries putting gold once more into circulation.

To the report are added a number of annexes containing official and semi-official estimates furnished to the Delegation on the probable future production of gold in the more important gold-producing countries, and a number of memoranda and statements by Professor Cassel, Sir Reginald Mant, Mr. Joseph Kitchin and others on gold production and the present supply and demand for gold.

It is understood that this volume will be followed by two others containing further documentation submitted to the Delegation.

Guide to Current Official Statistics of the United Kingdom. Vol. VIII. 1929. (H.M. Stationery Office. 1*s.*)

THE value of official statistics requires no emphasis at a time when so many matters of paramount importance are conspicuous in the public interest. Equally necessary is the provision of handy and inexpensive means for enabling the inquirer to discover which of the many Government publications issued year by year furnishes the statistics required for his particular purpose. Such a means is provided by this *Guide*, which consists not only of an annual catalogue of official publications containing statistics, but also of a detailed index to their contents, arranged under subject headings in such a manner that the nature of the information available on any topic can be ascertained with ease and celerity.

CURRENT TOPICS

THE next meeting of the British Association, which opens on September 23, 1931, is of particular importance, since it is to be held in London. Economists will therefore be glad to learn that Professor Edwin Cannan has accepted the Presidency of Section F. The meetings of this Section will be open to students and economists generally, who will be welcome. It is to be hoped that some foreign economists will take this opportunity of getting into touch with their English colleagues. Particulars of the arrangements can be obtained from the Recorder of the Section, Mr. R. B. Forrester, London School of Economics, Houghton Street, London, W.C. 2.

IN referring, in the last issue of the JOURNAL, to the new Department of Business Administration at the London School of Economics, we quoted from the Annual Report of the London School some references to the early days of the Harvard Graduate School of Business Administration. It seems, however, that the Harvard School, like the new Department of the London School, started from small beginnings. We have pleasure in printing the following correction from Dean Donham of the Graduate School of Business Administration, Harvard University :—

"My attention is called to a statement on page 536 in the issue of the ECONOMIC JOURNAL of September 1930 which refers to Harvard Graduate School of Business Administration. A statement is made that the Harvard School of Business started with an endowment of $5 million, and a contrast is drawn between this sum and the funds available for the new department of Business Administration, Research and Training at the London School of Economics. For this new department funds have been made available by important business firms amounting to about £5,000 a year for five years. The contrast is perhaps a little unfortunate because it is so far from a statement of the facts. The Harvard School of Business started like the new department at the London School of Economics with a guarantee fund in 1908 of $25,000 a year for five years, almost exactly the same sum and the same period for which the London School has received assurances. The Baker Foundation did not become available to the School until 1925, when it was required not for endowment but to construct the buildings needed to conduct a School then rapidly approaching a thousand in numbers. The whole sum was expended on educational buildings and living quarters for such a School. The endowment of the School at Harvard still continues small, the most important part of its current support having continuously come from business firms in the United States. The funds so secured from industry are entirely used for purposes of research, the cost of operating the School being met by tuitions. I shall appreciate your making the correction in the JOURNAL, since it seems to me unfortunate that an impression should be given that a business school of high grade cannot be established without large initial funds."

THE Council of the Royal Economic Society is preparing a definitive and complete edition of the Works of David Ricardo, probably in seven volumes, under the Editorship of Mr. Piero Sraffa. This edition will include not only all his published works and substantial extracts from his speeches in Parliament and contributions to Royal Commissions and the like, but also so much of his correspondence as can be discovered and is of general interest.

Will Members of the Society kindly give us what help they can in tracking down any of Ricardo's letters which have not yet been traced by the Editor? We have already had the good fortune, through the friendly offices of Mr. Frank Ricardo, to discover the letters of Malthus to Ricardo, which give the other side of that famous correspondence, the letters of James Mill and McCulloch

to Ricardo, and also a small number of unpublished letters from Ricardo to various correspondents. We are all the more anxious, therefore, to obtain any further unpublished material that there may be.

Apart from his work as an economist, Ricardo was a stock-jobber and loan contractor during and after the Napoleonic wars, and a Member of Parliament from 1819 to 1823. Besides the published series of his letters, it is known that there must have existed regular correspondence with James Mill, Pascoe Grenfell, Jeremy Bentham, Edward Wakefield, Thomas Smith of Easton Grey, C. H. Hancock, Robert Torrens, Thomas Tooke, and many contemporary politicians. For any letters of Ricardo to these or others we should be most grateful. We should also be obliged for any reference to items of Ricardian interest, especially to portraits and caricatures.

Any communication should be addressed to Piero Sraffa, King's College, Cambridge.

THE London School of Economics is about to issue a Series of Reprints of Scarce Tracts in Economic and Political Science. Commencement has been made with the issue of Alfred Marshall's two essays on *The Pure Theory of Foreign Trade* and *The Pure Theory of Domestic Values*. Printed for private circulation in 1879, they have now been made available for public circulation in their original form by the kind permission of Mrs. Marshall. The price of the work is 5*s*., but members of the Royal Economic Society are entitled to purchase copies for 3*s*. 6*d*. It is proposed to make proportionate reductions on all future works issued in this Series to members of the Royal Economic Society.

The list of works under consideration is given below. But this list is no indication of the immediate plans in regard to the Series. In any case it will not include any of the Reprints to be issued by the Facsimile Text Society of the United States (which will also be available to Members of the Royal Economic Society on special terms), and the number of works reprinted will depend upon the demand.

In order to assist the School in its decisions, members of the Royal Economic Society are invited to indicate the works in the following list in which they would be particularly interested (letters should be addressed to Mr. B. M. Headicar, London School of Economics, Houghton Street, W.C. 2.) and thus afford the editors of the Series some idea as to the works which are most needed.

Books suggested for Inclusion in the Proposed Series of Reprints.

1. Gray (John). A Lecture on Human Happiness. 1825.
2. Bray (J. F.). Labour's Wrongs and Labour's Remedy. 1839.
3. Ponet (John). A Short Treatise on Politicke Power. 1556.
4. Winstanley (G.). The True Law of Freedom on a Platform. 1652.
5. Ravenstone (Piercy). A few Doubts as to the Correctness of some Opinions . . . 1821.
6. Winstanley (G.). The light Shining on Buckinghamshire. 1648.
7. Chamberlen (Peter). The Poor Man's Advocate. 1649.
8. Goodman (Christopher). How Superior Powers ought to be obeyed. 1558.
9. Senior. Three Lectures on the Cost of obtaining Money.
10. ,, Three Lectures on the Transmission of the Precious Metals.
11. Jenkin (Fleeming). Graphical Representations of the Laws of Supply and Demand.
12. Mill (J. S.). Unsettled Questions.
13. Mill (James). Commerce Defended.
14. Barton (John). Observations on the Circumstances which Influence the Condition of the Labour Classes of Society.
15. Longfield. Lectures on Commerce and Absenteeism.
16. Jones (R.). Inaugural Lecture.
17. Dupuit. Essays from the *Annales des Ponts et Chaussées.*
18. Torrens (R.). Essay on the External Corn Trade.
19. ,, The Budget.
20. Bailey (S.). Critical Dissertation on Value.
21. Cairnes. International Trade.
22. Tucker (J.). Elements of Commerce and Theory of Taxes. 1755.
23. Yarranton. England's Improvement by Sea and Land. 1677.
24. Radcliffe. Origin of the New System . . . commonly called "Power Loom Weaving." 1828.
25. Gaskell. The Manufacturing Population of England. 1833.
26. Davenant. Essays on Ways and Means . . .
27. Selected articles contributed by Arthur Young to the *Annals of Agriculture.*

RECENT PERIODICALS AND NEW BOOKS

Journal of the Royal Statistical Society.

Part IV. 1930. *Housing in Liverpool: a Survey, by Sample, of Present Conditions.* D. C. JONES and C. G. CLARK. *Our Food Supply, before and after the War.* A. W. FLUX.

International Labour Review.

AUGUST, 1930. *Wages Policy and the Gold Standard in Great Britain.* J. R. BELLERBY and K. S. ISLES. *The Agrarian Structure of Poland from the Point of View of Emigration.* Z. LUDKIEWICZ. *Industrial relations in the Zeiss Works.* T. G. SPATES. *International Exchanges of Young Workers.*

Quarterly Journal of Economics.

AUGUST, 1930. *The Diffusion of Stock Ownership in the United States.* G. C. MEANS. *Demand Curves in Theory and in Practice.* E. W. GILBOY. *Factors in Industrial Integration.* J. JEWKES. *Has the Native Population of New England been dying out?* J. J. SPENGLER. *Moore's Synthetic Economics.* M. EZEKIEL.

Political Science Quarterly.

OCTOBER, 1930. *The Reparations Settlement and Economic Peace in Europe.* T. W. LAMONT. *Financial Aspects of International Relations.* J. C. STAMP. *Pareto and Pantaleoni; Personal Reminiscences.* E. R. A. SELIGMAN.

Review of Economic Statistics (Harvard).

AUGUST. *Security Loans in Recent Years.* W. L. CRUM. *A Statistical Study of Bank Clearings,* 1875–1914. H. V. ROELSE. *Monthly Index-Numbers of British Export and Import Prices,* 1880–1913. A. G. SILVERMAN.

University of Pennsylvania Law Review.

APRIL and MAY, 1930. *Methods of regulating Unfair Competition in Germany, England and the United States.* F. E. KOCH. An important and concise comparative survey, including both the well-known leading cases and the more recent judgments on restraint of trade.

Journal of Economic and Business History (Harvard).

AUGUST, 1930. *Risk in Sea Loans in Ancient Athens.* G. M. CALHOUN. *The Hanseatic League.* C. BRINKMANN. *Wages in Eighteenth-century England.* E. W. GILBOY. *Revolutions of* 1848 *and German Emigration.* M. L. HANSEN. *Growth of Capital in the United Kingdom.* P. H. DOUGLAS. *Early Factory Magazines in New England.* B. M. STEARNS. *Fisk and Hatch, Bankers and Dealers in Government Securities,* 1862–85. H. E. FISK. *Financial Management of the Cattle Ranges.* L. PELZER.

Journal of Political Economy.

AUGUST, 1930. *Velocity of Bank Deposits in England.* L. D. EDIE and C. WEAVER. *English theories of Foreign Trade before Adam Smith.* J. VINER. *The Elasticity of Bank-notes.* L. W. MINTS. *The Relationship of Business Activity to Agriculture.* E. GRAUE.

American Economic Review.

SEPTEMBER, 1930. *New York Public Utility Regulation.* J. BAUER. *Proposed National Banking Legislation.* F. A. BRADFORD. *Static and Dynamic Economics.* S. KUZNETS. *Unemployment and Technical Progress in Commercial Printing.* E. F. BAKER. *Tariff Act of* 1930. A. BERGLUND.

Annals of the American Academy of Political and Social Science.

SEPTEMBER, 1930. *Post-war Progress in Child Welfare.* Part I: *Recent Changes in Birth-rate and other Factors.* Part II: *Health Work for Children.* Part III: *Mental Hygiene.* Part IV: *Special Problems of Special Groups.* Part V: *General Questions, Research, Training, etc.*

JULY, 1930. This is a special number dealing with the "Economics of World Peace." Part I: *Population Growth and Migration.* Part II: *International Transport and Communication.* Part III: *Foreign Investments.* Part IV: *Competition for Raw Materials.* Part V: *Commercial Policies and Tariffs.* Part VI: *An American Economic Policy.* In an Appendix, Prof. J. BONN deals with *Economic Tendencies affecting the Peace of the World.* There is a Supplement on *Foreign Land Problems.*

Wheat Studies (Stamford, California).

MAY, 1930. *Survey of the Wheat Situation, Dec.* 1929 *to April* 1930. A notably high level of visible supplies in North America, an unprecedentedly small post-war volume of international trade, and a sharp decline of wheat prices from early January to the middle of March were the outstanding features.

JUNE. *Growth of Wheat Consumption in Tropical Countries.*

JULY. *Japan as a Producer and Importer of Wheat.*

SEPTEMBER. *The Changing World Wheat Situation.* In the changes from year to year in the international wheat situation, the various countries of the world play quite different parts. The changing surpluses from Canada, Argentina, Australia are forced on the international market almost without regard to price, promoting wide fluctuations from year to year. The autumn of 1930 finds the ability and disposition to withhold or to accumulate surplus stocks, essential to the prevention of abnormal price depression when supplies are above current requirements, weakened or absent to an extraordinary degree.

Metron.

JUNE, 1930. *The True Rate of Natural Increase of the Population of the United States.* L. I. DUBLIN and A. J. LOTKA. *The Greek National Income and Wealth in* 1929. P. D. REDIADIS.

Index (Stockholm).

AUGUST, 1930. *International Price Relations.* B. OHLIN.

SEPTEMBER, 1930. *The Future of the Rate of Interest.* J. M. KEYNES. *Some Foreign Trade Problems of To-day.* P. JACOBSSON.

Kyoto University Economic Review.

JULY, 1930. *Progression in the Land and Business Taxes.* M. KAMBE. *The Burden of Taxation on the Citizens of Big Cities in Japan.* S. SHIOMI. *The Essential Function of Commerce and Commercial Economics.* K. TANIGUCHI.

The Economic Record.

AUGUST, 1930. (Supplement.) *The Economics of Australian Transport.* This number includes sixteen papers on Australian transport, in relation to finance and subsidies, the competition of road and rail, and the co-ordination of services. There is an important paper on Australian oversea shipping. Among well-known contributors are D. C. COPLAND, J. B. BRIGDEN, T. HYTTEN, and L. F. GIBLIN.

Revue d'Économie Politique.

MAY–JUNE, 1930. *La France économique; annuaire pour* 1929. (Population, prices, finance, production, trade and labour; by leading French economic experts.)

JULY–AUGUST, 1930. *L'œuvre scientifique de quelques économistes étrangers: F. von Wieser.* M. ROCHE-AGUSSOL. *Essai sur la crise agricole; production et population.* R. COURTIN and P. FROMONT. *Les ententes industrielles internationales.* R. CONTE. *Le bolchevisme.* R. GONNARD. *Le perfectionnement de l'outillage national: Projet Tardieu.* R. FRANCQ. *La circulation monétaire aux États-Unis.* J. P. KOSZUL.

Journal des Économistes.

JULY, 1930. *La re-évaluation des bilans en France.* M. GARSOW. *La théorie de la valeur et la théorie générale de la monnaie.* H. HORNBOSTEL.

Zeitschrift für die gesamte Staatswissenschaft.

SEPTEMBER, 1930. *Zur Lehre von den Bewegungs-Vorgängen des Wirtschaftslebens.* R. STUCKEN. States certain conditions necessary to be observed in a deductive treatment of economic variation in the manner of Cassel. *Die Neuordnung der Britischen Kohlenwirtschaft.* F. HEYER. A study of the Coal Mines Act of 1930 in relation to post-war economic policy. *Wirtschaft und Nationalismus im fernen Osten.* T. SURANYI-UNGER. *Das Handbuch der Finanzwissenschaft.* O. VON MERING. A critical report.

Jahrbücher für Nationalökonomie und Statistik.

JULY, 1930. *Die physiokratische Wirtschaftstheorie und die Marxsche Arbeitslehre.* E. LUKAS. *Zu Cassels Kapitaltheorie.* W. M. F. VON BISSING. *Das Aequivalenprinzip.* O. VON NELL-BREUNING. *Theorie der volkswirtschaftlichen Dynamik.* E. CARELL and E. H. VOGEL.

OCTOBER, 1930. *Der Profit als eine nichtwirtschaftliche Kategorie.* L. FRITZSCHING.

Weltwirtschaftliches Archiv.

OCTOBER, 1930. *Die Theorie der komparativen Kosten und ihre Auswertung für die Begründung des Freihandels.* G. HABERLER. *Das Gesetz der komparativen Kosten.* G. COHN. *Das theoretische Schema der gleichmässig fortschreitenden Wirtschaft.* D. I. OPARIN. *Notenbankfreiheit?* H. NEISSER. *Die finanzpolitische Bedeutung der Zölle.* R. B. KÄPPELI. *Die Entwicklung der dänischen Handelspolitik und des dänischen Aussenhandels nach dem Kriege.* J. C. JORGENSEN. *Das Problem der interlokalen Bankenkonzentration in den V. S. von Amerika.* T. BALOGH.

Zeitschrift für Nationalökonomie.

AUGUST, 1930. *Statics and Dynamics.* F. H. KNIGHT. In order to make a complete analogy in economics with the mechanical conception of equilibrium, it is necessary to introduce the elements of resistance, inertia and friction. The equilibrium is analysed under different assumptions, and found to be decreasingly useful the more it is necessary to allow for long adjustments and economic progress. *Comparative Statics.* E. SCHAMS. This study is methodological, making a further analysis of the concepts of variation, variability and economic quantity. *The Abstinence Theory and the Under-valuation of Future Wants.* A. MAHR. Analyses current types of the abstinence theory (Carver and Marshall), and argues that neither these nor Böhm-Bawerk's theory of interest explains under-valuation. (All these articles are in German.)

Vieiteljahrshefte zur Konjunkturforschung.

SONDERHEFT 20. *Die Zukunft des Roggens.*

Giornale degli Economisti.

APRIL, 1930. *La rendita del consumatore e i principi generali dell'economia.* U. GOBBI. A brief reply to some criticisms urged by Professor Graziani in the January number of the *Giornale* against the writer's conception of consumer's surplus. *Sull' influenza della elasticità della domanda nella produttività crescente.* A. CABIATI. The arguments adduced by Marshall to prove that, in an industry where the individual units are producing under increasing returns, monopoly need not necessarily result, are reinforced when account is taken of the influence of variations in the elasticity of demand for an expanding output. *A proposito della presunta identità dei concetti di monopolio e concorrenza.* L. ROSSI. *Una ricerca sulle cause tecniche della crisi delle borse valori americane.* L. FEDERICI. An important cause of the collapse of the New York Stock Exchange boom, which started to crumble on October 18, 1929, is to be found in certain technical peculiarities of the American stock exchanges. With the object of lessening speculation it is forbidden to carry over dealings in securities, and settlements have to be made within forty-eight hours or less. The effect has been to intensify speculation in its most dangerous forms. In practice the prohibition on future transactions has been surmounted by the system of buying shares on margins, which subjects speculators to much greater risks than they incur elsewhere where fortnightly or monthly settlements prevail. A

further consequence of the American regulation is that operations on "bear" account are penalised relatively to those conducted for a rise, as with daily settlements the former require much larger financial resources than the latter. It is noteworthy that throughout the Stock Exchange boom and down to the day when values began to fall, there was no important bear position in the stock markets. This is borne out by an analysis of brokers' loans and other financial statistics for the critical period. The markets, deprived of any restraining tendency in the shape of large bear operations, were driven up to extravagant heights and then fell with all the greater rapidity owing to the absence of the compensating influence which the bears would otherwise have exercised when buying in the shares they had sold at an earlier date. The slump was also aggravated by the very large volume of shares held on margins and by the system of daily settlements, which combined to bring about forced selling on a great scale. *I sindicati d'operazioni ed il movimento dei prezzi di borsa.* C. M. FLUMIANI. A study, based on first-hand observation of the New York Stock Exchange, of the methods and conditions of success of syndicates formed to influence or manipulate share values.

MAY, 1930. *La legge della domanda dal punto di vista della statica e della dinamica.* A. BORDIN. A lengthy treatment of certain of the mathematical equations of demand and supply based on a modified version of the Walras-Pareto equations. *La situazione patrimoniale delle casse di risparmio ordinarie attraverso le vicende della lira.* L. PASSARDI. *La crise agraria in Ungheria.* C. DI NOLA.

JUNE, 1930. *La dinamica economica di H. L. Moore.* G. DEL VECCHIO. A review article containing a critical appreciation of some general aspects of Professor Moore's *Synthetic Economics. Sul valore in regime di costi crescenti.* A. BREGLIA. Under conditions of diminishing returns, when there are wide variations in individual costs and where individual low-cost producers are sufficiently important to exercise a measure of monopoly power—*i.e.* directly to influence market price—it is not inevitable that price should be fixed at the marginal cost: it may be fixed slightly below marginal cost so as to exclude some of the potential marginal producers. *Il problema filandiero nell'economia serica italiana.* L. USSI.

JULY, 1930. *Camillo Supino.* E. FOSSATI. A short appreciation and bibliography of the writings of Professor Supino. *Lo spirito di lucro como movente dell' attività economica.* J. G. KRETSCHMANN. *Sugli effetti delle riparazione tedesche.* PROFESSOR A. CABIATI maintains, in reply to a review in the ECONOMIC JOURNAL for June 1930 of his book, *Da Versailles all' Aja*, his contention that German reparation payments (especially since the large falling off in the inflow of foreign loans) constitute a very serious and enduring disturbing factor in international trade. Even a slight reduction in Germany's costs will enable her industrialists to drive the products of other countries off the home and neutral markets, thus exercising a depressing effect upon general export prices. This alteration in comparative costs, being caused by artificial and not by natural forces, will produce crisis conditions

among the industries of other countries. In so far as reparation payments result in an abnormal import of capital into Germany from abroad there is a net destruction of wealth. The movement towards increased tariffs in all countries, not least in England, is in part a consequence of the pressure of German reparations, which constitute a pathological element in the economic system of the world. *Vincenzo Dandola e l'economia dell' agricoltura.* F. LUZZATTO.

AUGUST, 1930. *Le equazioni dell' equilibrio nell' ipotesi di sottrazioni di ricchezza operate dal governo su determinati individui della collettività.* G. SENSINI. *La situazione economica della nuova Austria.* A. LAUTERBACH. A brief account of some of the economic difficulties with which Austria at the present time is confronted. *Lo Stato e l'industria elettrica. Polemiche americane.* M. MORTARA. An analysis of the views held by the protagonists on both sides in the discussion now proceeding in the United States as to the necessity for some measure of public control of the electrical industry. *L'industria casearia sarda sulla fine del settecento.* R. DI TUCCI.

La Riforma Sociale.

JULY–AUGUST, 1930. *Nota sugli scarti internazionali nei saggi ufficiali dello sconto.* PROFESSOR A. CABIATI discusses briefly some of the reasons for the maintenance of varying bank rates of discount in different countries at the same time. *Economia ed economisti di Puglia.* G. CARANO-DONVITO. *Il numero degli articoli contenuti nei ruoli delle imposte e la statistica della proprietà fondiaria.* G. MEDICI. *Risparmio ed educazione fisica.* G. SACERDOTE-IACHIA. *Keynes e gli alti salari.* C. PAGNI. A criticism of the view propounded by Mr. Keynes in the *Political Quarterly* for January 1930 in favour of the use of taxation as a means of redistributing the national income, in place of the attempts made by trade unions to increase the proportion of the national income accruing to labour in the form of wages. Dr. Pagni contends that high taxation has also its costs and serious disadvantages; that transfers from the rich to the poor may have prejudicial effects on the characters of the recipients; and that high wages have the advantage of stimulating the efforts of the wage-earners and of giving the employers a strong incentive to reduce labour costs. *Ci sono troppe banche in Italia?* L. EINAUDI. In February 1930 there were 4,079 banking institutions in Italy, including saving banks, agricultural credit institutions, etc. Are these too many? "All those caisses and banks are superfluous which are administered by asses, usurers, dilettanti, and by those who conduct banking for what they can get out of it. But [these 4,079] are few in comparison with the thousands of other banks which could do useful work in rural centres which are now devoid of them, in other centres where there are only branches of large banks concerned to pump money back to the centre, and in the large cities themselves where the existing institutions have failed to meet the requirements of sections of the community which stand in need of banking assistance." *La lotta mondiale contro il protezionismo.* E. GIRETTI. *Prezzi e consumi del tabacco in Italia.* F. A. RÈPACI.

SEPTEMBER–OCTOBER, 1930. *Annotazioni all' "Ottima Imposta" di Luigi Einaudi.* A. LORIA. *"La dottrina dei tre principii" di Emanuele Sella.* V. MORETTI. *I debiti pubblici dello Stato dal 30 guigno 1922 al 30 guigno 1929.* E. ROSSI. *Le open-market operations del Federal Reserve System.* A. MARTINENGHI. A useful and convenient résumé, at some length, of the open-market policy of the Federal Reserve System between 1919 and 1928. *Quale deve essere il compito dell' agricoltore, dell' industrial e del commerciante.* E. OTTOLENGHI. *Intorno all numero delle banche edai loro costi di gestione.* L. E. The writer quotes the President of the General Federation of Italian Bankers: "The general expenses, the greater part of which (from 70 to 80 per cent.) is represented by the cost of the personnel, have not diminished but have increased for some items. In the case of some institutions the expenses for personnel alone constitute from 1·5 to 2·0 per cent. of the deposits."

Annali di Economia.

Le relazioni commerciali fra l'Italia e l'Impero Britannico. G. MORTARA. A statistical analysis of the magnitude and importance of international trade between Italy and the British Empire before the War. *Osservazioni sopra le relazioni tra gli economisti italiani e gli economisti inglesi.* The substance of one of three lectures given by PROFESSOR G. DEL VECCHIO on behalf of the *Serena* Foundation of London. "It is certainly painful for us, who have so high a regard for the English economists and of whose works we are such attentive and devoted readers, to have to note that down to the present day there has been no substantial recognition on their part of such writers as Serra, Galiani, Verri, Ferrara, Pantaleoni, and Pareto. This is not for any reason of petty national *amour propre* . . . but from a sense of justice towards the memory of these great men who merit such recognition. And then also because an adequate recognition, on the part of the English, of the contribution made by our writers to the secular work of economic thought, would have facilitated the unification of Italian thought with international thought. In this way a crisis would be resolved which has not yet been overcome in our scientific literature, almost entirely divided as it is into one section which is Italian and not international and another which is international and not Italian." *Società ed economia nell' India antica e moderna.* B. K. SARKAR. *Giudizio edonistico e guidizio corporativo.* G. E. FERRI. It is contended that the essence of the Corporative State is the conscious and deliberate search after means for maximising welfare, in contrast to the anarchic struggle for individual gain embodied in the uncontrolled democratic State. The hedonistic calculus stands condemned as an inadequate and imperfect explanation of the mainsprings of man's economic activities. The Corporative State resolves into one synthesis the political, legal, moral and economic order of the community. *Schema di varianti della teoria paretiana dell' equilibrio.* A. BORDIN.

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